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The Quetta Hunt
AND
Some Diseases of Fox Hounds in India.

By Major E. S. W. PEATT, O.B.E., F.R.C.V.S., R.A.V.C., M.F.H.

The Quetta Hunt dates back to 1899, when the records show that a Major Pinney first introduced fox hounds to Baluchistan and hunted the country round Quetta. Without intermission the hunt has carried on ever since and in the record book are inscribed the names of 25 masters who have hunted the pack during the last 30 years.

The hunt uniform is a pink coat with a buff collar, brass buttons inscribed Q.H. and white topee; the hunt staff wear velvet hunting caps.

Cubbing begins about the first week in September when crops are still uncut; hunting proper starts about November 1st and continues two days a week until the end of March, when the Hunt point-to-point ends the season. The times of meets vary from 6 a.m. to 10 a.m., depending on the weather, which can be very severe here.

Jackals are the principal quarry, but foxes are often hunted and, being grey hill foxes, are much fitter and larger than the Indian fox of the plains and in consequence provide some fine sport. The best hunt last season was a point of 7½ miles, 12½ as hounds ran.

The country is in parts barren, in others heavily cultivated, the principal obstacles being streams and irrigation ditches called karezes, which may be alarmingly wide and deep. The average "Field" last season numbered 75, the largest 150.

We have 33 couple of hounds in kennels at the moment, a pack of about 20 couple turning out on most hunting days.

In the United Kingdom a fox hound, compared with other breeds of dog, is a delicate animal, but if he survives distemper and is entered successfully, it is considered bad luck to lose him from other causes.

In India conditions are very different, and if you are fortunate enough to have a pack of hounds in a place where it is possible to rear puppies, their troubles are far from ended when they have survived distemper and are entered. In fact, one wages a continual war against the many infectious and fatal diseases prevalent amongst dogs in this country which incessantly threaten the existence of a pack of hounds.

In the following pages several instances will be given of packs being completely wiped out by various diseases, and an attempt will be made to describe briefly some of the more common and deadly of these tropical conditions, with methods of diagnosis, prevention and treatment.

The author's experience in these matters has been gained by his connection with the Quetta Hunt during the past four years, and as Quetta is well known as one of the most healthy places, if not the most healthy place, for hounds in India, it will be realised that "Masters of Hounds" less fortunately situated in the plains have much more to contend with, and it says much for the keenness and faithfulness to the sport of these enthusiasts that they continue in face of all difficulties to keep these packs of hounds going year after year.

Consider for a moment the expense and trouble taken by practically every Indian Hunt annually. At the end of the hunting season hounds are sent to a hill station for the hot weather, where a second lot of kennels have to be maintained. Most hunts have annual drafts imported from home, and even if these hounds cost little or nothing, the travelling expenses are enormous. Some Hunts consider it cheaper to sell the pack at the end of each season and import an entirely new one every year. Even if a Hunt is so situated, *e.g.*, Quetta, that it can breed its own puppies successfully, it is considered necessary to import new blood from home every year or two for breeding purposes. If this is not done and one continues to inter-breed country-bred hounds, after one or two generations they become very light of bone, and some say inclined to run mute.

In the Quetta Hunt during the past three or four seasons it has been the rule for one parent to be of pure English or Irish blood, and the resulting puppies have been extremely good.

The question of the most suitable type of hound for India is a moot point, and my experience is that a hound which would catch the judge's eye at Peterborough would be most unlikely to stand the hard going out here. The hound we find most useful is of the light kind, with hare feet; the heavy-boned, over-topped hound with round cat feet and straight joints does not last. Some of our best performers have been of Welsh descent.

DAILY KENNEL ROUTINE:—

Some remarks on this subject may be of interest.

6 *a.m.*—Road exercse daily with the kennelman on foot in the non-hunting season. If there are a number of young puppies out this is no easy task, as the country is over-run with pye dogs and, every corner one turns, a mangy-looking animal running away with its tail between its legs presents an irresistible attraction for young hounds. During hounds' absence, the kennels are cleaned out, floors swilled with creolin, straw changed on benches and water troughs emptied, cleaned and refilled.

8 *a.m.*—Hounds return to kennels and are turned out in shady paddocks.

10 *a.m.*—Morning feed. Hound food varies in different parts of India. In Quetta we feed cooked horse flesh, boiled jawari (a coarse Indian flour) and vegetables, all the year round. It is interesting to note that although a large proportion of horse flesh is fed all through the hot weather, we do not have skin trouble and hounds keep very fit.

DEPT. OF VET. MEDICINE

We use an average of one horse per day for 30 couple of hounds in the hunting season, and one to two days in the non-hunting season. This is a much larger proportion of meat than is used in most English Hunts.

10.30 *a.m.*—Hounds are kennelled up during the heat of the day.

4 *p.m.*—Hounds are turned out in paddocks; each is groomed for five minutes with a horse body brush which is dipped occasionally in a weak solution of creolin. At the same time all mouths are examined for signs of canine typhus, warts, etc., and ticks removed from coats.

6.30 *p.m.*—Evening feed, after which hounds are kennelled up for the night.

Raw ribs are fed on Sunday and Thursday mornings.

This routine varies, of course, in accordance with climatic conditions.

Precautions for the Prevention of Disease:—

The following routine is rigidly adhered to:—

1.—New drafts are isolated in a building 400 yards away from the kennels, for three weeks after arrival.

2.—During the non-hunting season hounds are kept in two packs, the members of one pack never coming in contact with those of the other, each pack going to exercise separately and having separate paddocks and kennels. Thus, if an outbreak of contagious disease occurs, *e.g.*, rabies, one pack is known to be free from contact. This is done also in the hunting season as far as possible, but hounds come in contact when hunting.

3.—All hounds are dipped once weekly in a bath of disinfectant.

4.—On returning from hunting, eyes are washed out with boric solution, conjunctivitis being very common on account of the dust. Wounds and scratches are treated with tincture of iodine at once; the danger of hounds being bitten by a rabid jackal must never be lost sight of.

5.—Hounds' feet are placed in a foot bath of alum and vinegar twice weekly during the hunting season, to harden them.

6.—Every hound and terrier is inoculated annually with the Lederle Canine Rabies Vaccine (one injection method).

7.—Puppies were inoculated last season with the Field Distemper Vaccine. In previous years Parke Davis' Canine Distemper Mixed Bacterin was used.

8.—Bitches a week before whelping are put on a course of glucose as a preventative for parturient fever.

Canine Piroplasmosis or Tick Fever.

This is undoubtedly the most wide-spread and feared disease to be met with among dogs in India. It is especially dangerous for fox hounds, because the fresh drafts out from home, which many hunts get annually, are particularly susceptible to it. The unavoidable crowding together of hounds in kennels also aids its spread. There are in reality two diseases, each caused by a separate and distinct piroplasm: (i) *Babesia canis*; (ii) *Babesia gibsoni.*

The second is the more common disease in India and it is possible for a dog to be infected with both species of parasite at the same time.

Babesia canis is a much larger parasite than *B. gibsoni*, measuring about 3μ in length and $1\text{-}2\mu$ in diameter; it is pear-shaped usually and occurs sparingly in the red blood corpuscles, three or four being the most found in a single corpuscle, generally one or two are found with difficulty; if 10 per cent. of corpuscles are invaded the infection is a serious one.

Babesia gibsoni measures about 1μ in diameter, resembles a coccus and occurs in large numbers—as many as 50 have been seen in one corpuscle, and 50 to 90 per cent. of corpuscles may be invaded.

This parasite is often found in animals only slightly affected or apparently normal, as well as in definite cases.

Method of Infection.—Both conditions are transmitted from an infected host to healthy animals by ticks. The variety of tick varies with the country in the case of *B. canis*, but for practical purposes all ticks should be looked upon with suspicion. The seed tick is a transmitter and is commonly found in kennels. *B. gibsoni* has not been reported from any country except India and the transmitting agents are not definitely known. A tick, the *Hæmophysalis vispinosa* has been mentioned by Patten (1910) as a transmitter; he also states that the jackal is the normal host of the *B. gibsoni*

Symptoms.—These differ considerably in the two conditions. *B. canis* causes fever, marked anæmia, jaundice in acute cases, and recovery or death in a short period; relapses are rare, although it has been proved that piroplasms remain in the body for several years and maybe for a lifetime.

In *B. gibsoni* infection the onset of symptoms is gradual and insidious and it is difficult to say when the disease started. It is characterised by progressive unthriftiness and anæmia, relapses occurring at prolonged intervals, fickle appetite, rough coat and lassitude. Fever occurs intermittently. Relapses may take place at intervals of a year or six months after a first attack, but if the disease progresses the intervals become shorter and shorter and eventually the dog dies from exhaustion.

Treatment.—Intravenous injection of 5-10 c.c. of a one per cent. solution of trypan blue, into the external saphena vein, is practically a specific for *B. canis*, but has no effect on *B. gibsoni.*

B. gibsoni is best treated with arsenical preparations, *i.e.*, novarsenobillon, salvarsan, etc., intravenously. Treatment should be continued until piroplasms have vanished from the blood.

Trypanarsamide is less irritant to the tissues, can be given subcutaneously and is often very successful; dose 8-10 c.c. of a 10 per cent. solution in sterile water for a 25 to 35 lb. dog; repeat four or five times at five day intervals. If given in excess this drug will cause optic trouble.

Prevention.—Consists in the eradication of ticks. Daily all hounds should be examined and ticks removed, kennels should be built of iron and concrete, benches treated with creolin, and straw bedding, if used, changed daily; some kennels do not use any bedding in the tick season. Once weekly dip hounds in an anti-tick solution. Where the disease is of constant occurrence, temperatures must be taken at least once daily, and any hound with a rise of temperature treated at once with trypan blue or trypanarsamide; early treatment is by far the most effective. Spleens and livers of anæmic hounds can be examined for enlargement.

Tick fever is the curse of many packs of hounds in this country, and it is not uncommon to have a pack so

depleted by it as to stop hunting completely. Madras is one of the worst localities, and the care and trouble taken by the Madras Hunt to combat tick fever is, I believe, wonderful.

Surra.

Many packs of hounds in India have suffered greviously from this disease, some being completely wiped out by its ravages. (1) The Bombay Hunt in 1926-27 lost most of their pack; the (2) Saharanpore Hunt in 1924-25 had a bad outbreak complicated with distemper, and again in the following year this pack was completely destroyed by surra and piroplasmosis (*Gibsoni*).

The *Trypanosome evansi* is the causal agent of surra in the horse and camel and the parasite causing the disease in dogs is morphologically identical. It is easily found in blood smears taken when the rises of temperature occur during the course of an attack: the temperature may be anything from 102° to 106° F.

Symptoms vary and may be very misleading.

In acute cases, a hound which appeared normal the previous night may be found dead in the morning, others show violent symptoms resembling brain affection.

In sub-acute cases the temperature varies from 102°-106° F. and there may be very little loss of appetite at first. Later, the aqueous humour becomes cloudy and eventually opacity of the cornea may result, this being a very diagnostic symptom. The appetite now fails and the animal is listless and unwilling to move, the eyeball sinks into the head and the membrana nictitans protrudes. Nervous twitchings and occasional barks or whines may be noticed; later the animal becomes comatose and dies.

Method of Infection.—For an outbreak to occur, a reservoir (surra-infected animal) and a method of transmission are necessary. Any animal which can be infected with surra may be a reservoir, *i.e.*, horse, camel, dog, jackal. The method of transference is either direct, as by ingestion, or indirect, through the medium of biting insects such as Tabanidæ, Hæmatopoda, Stomoxys, fleas, ticks, etc.

It has been suggested that hounds may be infected by breaking up a surra jackal. This could only occur through hounds swallowing a small quantity of blood, because I have yet to see a pack of fox hounds actually eat a jackal.

Treatment.—Intravenous injections of Bayer 205, 0·05 gramme per kilo body weight, as recommended by Kilgler and Weitzman, are very effective in some cases.

(3) Two cases of artificially-produced surra have been reported as cured by administering, subcutaneously, a one per cent. solution of Bayer 205 in four doses, as follows: first and seventh day 20 c.c., fourteenth and twenty-first day 30 c.c., making a total of 100 c.c., which represents one gramme of the drug.

In view of the success of this drug in curing surra in horses and camels, it may prove almost a specific if given in the early stages, when more is learned concerning dosage and method of administration.

An outbreak in the Delhi Hunt in 1928 was treated successfully with Naganol, I understand.

Prevention.—In a surra-infested district kennels should not be built in close proximity to horse or camel lines. Care should be taken lest an animal dead from surra be fed to hounds. The usual precautions against insects should be taken. If a case occurs in kennels, treat every hound at once with Bayer 205; do not wait for symptoms to develop. Have temperatures taken three times daily.

Distemper.

This world-wide affection of dogs is too well known to need any remarks. It has been the cause of a loss of many puppies in our Hunt during the past. Last season the "Field Distemper Vaccine" was obtained and ten couple of puppies were inoculated with it.

The vaccine supplied was of an experimental nature, with the object of finding a means of preserving the potency of the virus for a sufficient period, and during its transit through a high temperature, so that it could be effectively used in this country although prepared in England.

Rabies.

Annually every hound in kennels is inoculated with Canine Rabies Vaccine Lederle (one injection method) which is obtained from the Lederle Antitoxin Laboratories, New York.

This procedure has been adopted since 1925, when in September of that year a case of rabies developed in kennels, stopping hunting for some time. No further outbreak has occurred either in kennels or among puppies at walk since this precaution has been taken, although rabies has constantly appeared in Cantonments and Bazaars.

Canine Typhus or Stuttgart Disease.

During the seasons 1927-28, 1928-29, we had three fatal cases of this disease.

In all three the onset of the condition was very gradual; at first the hounds were noticed to be slack and listless, although feeding well and continuing to hunt twice a week.

Later they began to lose condition and vomited occasionally; no mouth lesions were as yet in evidence and the temperature was normal. In two cases the affected animals continued to hunt for two weeks before being taken out of the pack and isolated for observation. Workman, a third season hound, actually led the pack throughout a nine mile hunt and was the first hound to tackle the Jack, on the day before serious symptoms developed.

These consisted of continual vomition of blood, dark yellowish grey discoloration of the mucous membrane of the mouth, followed in 24 to 48 hours by bloody fæces and ulceration of the gums. The patient by this time was unable to stand, with emaciated body, sunken eyes and sub-normal temperature, eventually dying in a state of coma.

Post-mortem examination showed a dark brown deposit on the mucous membrane of the mouth in one case; in the others the mucous membrane was a dirty-yellow colour with slight ulceration of the gums. The mucous membrane of the œsophagus and stomach was greatly inflamed and a small quantity of blood was found in the stomach.

Prevention.—Most careful measures were adopted on the occurrence of these cases to prevent the disease spreading and on both occasions no further cases developed:—

I.—The carcass and all bedding in every part of the

kennels was burnt and the entire kennels disinfected and lime washed.

II.—Drinking water was treated with permanganate of potash.

III.—Once daily every hound's mouth was examined carefully for discoloration of the mucous membrane or ulceration of the gums.

IV.—Any hound seen to vomit was isolated for observation.

V.—Every hound was given Dimol 20 grains daily.

Leptospiral Jaundice, or the Yellows.

Although well known in England and Germany, the first authentic outbreak of this disease recorded in India occurred in the Madras Hunt last season and was reported in *The Field* (5).

The cause of the condition is the *Leptospira ictero-hæmorrhagicæ*, a parasite belonging to the Spirochæte group, and the condition is said to be similar to Weil's disease in man.

Symptoms.—The disease is difficult to recognise in its early stages and is insidious in onset. The appetite becomes capricious, urine is highly coloured, the animal is listless and loses condition. The mucous membranes of the mouth and conjunctiva become jaundiced and before death hæmoptosis and blood-stained diarrhœa occur; there is no rise in temperature.

In the outbreak reported by the Madras Hunt, the hounds first went off their feed, but continued to hunt and kept in fair condition, the first death occurring sixteen days after these premonitory symptoms started.

After a fast hunt on Boxing Day four hounds collapsed and died, pointing to the fact that symptoms were so slight as not to warrant these hounds being withdrawn from the pack before hunting on that day.

Post-mortem.—Shows pronounced jaundice of the mucous membranes of mouth and conjunctiva; the liver is abnormally yellow and all internal organs and tissues have a yellowish tinge.

The leptospira can be demonstrated microscopically by dark-ground illumination in smears from liver and lungs.

In some cases this is extremely difficult and it may be necessary to inoculate guinea-pigs with suspected liver or lung substance in order to prove the presence of the parasite.

(4) In a case reported in a fox, the leptospira were successfully discovered microscopically by treating sections of liver and lung by a silver process (improved Levaditti-Dobell).

Method of Infection.—Little is known about the method of infection, but the consensus of opinion is in favour of ingestion of infective material being the most likely.

The occurrence of the disease in a wild fox suggests that this may be a possible cause of leptospiral jaundice in fox hounds in England and, if this is so, why should not the jackal act in a similar way in India?

Treatment.—In man, Weil's disease is treated symptomatically, but as the parasite belongs to the Spirochæte group the drugs used in the treatment of Spirochætosis should prove useful in Leptospirosis.

The Madras outbreak was treated, apparently successfully, by two doses of ·3 grammes of novarsenobillon intravenously, at an interval of seven days.

Prevention.—If a case occurs in kennels, a course of novarsenobillon to every hound as a preventative is indicated. Scrupulous cleanliness in kennels and continual swilling of floors with a disinfectant should be insisted upon. An internal antiseptic such as Dimol or pot. permang. in the drinking water, might be of use.

Remarks.—On reading the account of the outbreak of "yellows" in the Madras Hounds, I was at once struck by the similarity in symptoms between their cases and those of canine typhus as seen in Quetta. In both instances the disease was slow in onset, the hounds continuing to hunt, but eventually collapsing after a strenuous day. In many cases of canine typhus, jaundice is a symptom, and this was so in two of the Quetta hounds which died from it.

Absence of rise in temperature, with hæmoptosis and bloody diarrhœa were constant symptoms in both diseases.

In view of this similarity of symptoms and of the fact that Leptospira have been found *post-mortem* in cases of canine typhus in Germany, one is led to wonder if these two conditions are not caused by the same parasite, *viz.*, *Leptospira ictero-hæmorrhagicæ*, and that the symptoms shown depend on the organ attacked by the parasite. For example, if the liver is the chief focus of infection, intense jaundice would result and the condition would by typical of "the yellows." On the other hand, if the stomach and intestine were infested by the Leptospira, one might expect hæmoptosis and bloody diarrhœa, with the resulting brown deposits on the tongue and buccal mucous membrane so characteristic of "canine typhus."

This possibility has no doubt occurred to those more fitted than the author to investigate the matter, and the suggestion is only made for what it is worth.

Conclusion.—A few rules evolved as a result of experience and which have proved of great value in dealing with sickness in hounds in India, may not be out of place here.

I.—If a hound is seen to be even slightly out of sorts, take him out of the pack and isolate until a definite diagnosis can be made.

II.—Do not treat infectious cases of any sort on the kennel premises; send them to a veterinary hospital where they are dealt with by a different staff.

III.—When shown a sick hound, think first of rabies and, having eliminated that, if the symptoms do not clearly indicate the trouble, take blood smears and examine for piroplasms and trypanosomes.

In compiling these notes my thanks are due to Major H. Allen, R.A.V.C., and Captain U. W. F. Walker, M.C., I.V.S., Punjab Veterinary College, Lahore, for much valuable information.

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(5) Moore. *The Field*, February 28th, 1928.

The Vermiform Appendix of the Ram.

By A. Spicer, f.r.c.v.s., Oxted.

During May of last year it was brought very definitely to my notice that one's knowledge of the penis and vermiform appendix of the ram was *nil* and it seemed wise to take some steps to remedy that state of affairs. One, of course, knew that the ram had a vermiform appendix and had heard that if it was removed the ram was of no further use for service. Whether this was a fact, or only an "old wives' tale," one did not know, but at any rate it was very generally believed.

One also knew that if there were crystals in the urine they collected at the point where the urethra left the penis to continue as the vermiform appendix, and gave considerable trouble.

As the first step the penis and prepuce of two wether lambs, about four to five months old, were obtained and on injecting water down the cut end of the penis it at once became evident that the vermiform appendix was adherent to the mucous membrane of the prepuce.

Later on an opportunity occurred of examining the penis of rams and of wether lambs between the ages of five to six months and it was then found that the wether lamb had no vermiform appendix and that in their case this organ never separates from the mucous membrane of the prepuce but undergoes complete atrophy. In the case of the ram lamb the vermiform appendix was completely separate from the mucous membrane and was firm and hard. In the case of lambs where one testicle had been removed and the other was in the abdomen, the vermiform appendix was similar to that of the ram lamb.

About twenty of the ram lambs (at the time of this inspection) were castrated with the Burdizzo castrator and on inspecting them two months later there was distinct evidence that the vermiform appendix had begun to atrophy. The atrophy would probably have been much more marked if the testicles had been completely removed, as it takes about two months for the testicle to be absorbed at that age.

Two points that one may be able to settle this year are—

At what age does the vermiform appendix separate from the mucous membrane of the prepuce in the lamb?

How long does it take completely to atrophy after a ram lamb, say, of five months of age, has been castrated?

From this it would appear that the vermiform appendix is an organ that is a necessity for the purposes of copulation and that without it a ram would be useless for that purpose.

In the *Veterinary Journal* for September there is an article by Professor E. J. Iwanow on "The Experimental Verification of the Question as to the Purpose of the Filiform Process on the Ram's Penis and the Possibility of Producing Sterility by Amputation."

In this experiment Professor Iwanow removed the vermiform appendix from five rams, and after allowing nine days for the stump to heal, each ram served three ewes, with the result (speaking from memory) that fourteen of them proved to be in lamb. This would seem to refute the old theory and show that the vermiform appendix is an absolutely useless appendage, which one can hardly believe; also, the old theory has been so generally believed and held for such a long period that one wonders if there is anything wanting in Professor Iwanow's experiment.

There are two things that one could suggest: First, that nine days are not long enough to show what effect the removal of the appendix might have, say, in cicatricial contraction; or any action it might have on any of the organs of reproduction. Second, the ram might be able to get three ewes in lamb, but if he were put with fifty, would he prove to be an uncertain stock getter?

It hardly seems likely that nature would give a ram a vermiform appendix unless he had some definite use for it.

Improvement in the Public Milk Supply: Is Pasteurisation Necessary?*

By J. Menton, l.r.c.p. and s.i. (County Bacteriologist), Stafford, and H. W. Steele-Bodger, m.r.c.v.s., Tamworth.

We are going to open our paper with a quotation of Sir George Newman: "It is generally recognised that milk obtained from perfectly healthy cows under the cleanest conditions, cooled immediately, and distributed with the least possible handling and delay, is the best that can be procured." It strikes at the root of the whole problem. In brief—if the money, brains and labour expended in treating the ills caused directly and indirectly by dirty and diseased milk were expended in preventing these ills by securing universally the production of an absolutely clean whole milk, a very different tale could be told.

In the time at our disposal to-night it is not possible to dwell at great length upon this important subject; one must be content, therefore, to state as concisely as possible the chief factors which have, in our opinion, contributed to the improvement of the public milk supply which has taken place up to the present, and certain recommendations which could improve it in the future. The Milk and Dairies Order, 1926, The Tuberculosis Order, 1925, The Milk (Special Designations) Order, 1923, have all played a part in the improvement of the public milk supply. Local authorities are paying increased attention to veterinary inspection, dairy control and laboratory examination of milk.

To quote again Sir George Newman: "The bacteriological evidence on the point is not only the most crucial evidence, the finest arbiter between clean and dirty milk, but it is demonstrating in an overwhelming and indisputable way that the milk supply of to-day is a wholly different article from that passed off on the public a few years ago."

Legislation has been responsible for improvement, but legislation can never be the last word. It can only lay down lines which must be followed. The crux of the whole question is co-operation between the producer, the distributor, the retailer and the consumer.

Clean dairying is essential, but clean handling and prompt handling is essential to deliver this good perishable article to the consumer. The consumer must also co-operate; he gets just what he demands—if he demands clean raw

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tubercle-free milk he will get it. If he is indifferent he will get an indifferent article. It should be appreciated that neither the producer, the distributor nor the consumer can afford to be philanthropists, each must get value for money expended. It is essential, therefore, that the better price should be paid for a better quality. The public in general are unwilling to pay more for superior milk and yet for years they have been content to pay too much for inferior milk. Good milk is cheap at a good price, but bad milk is dear at any price.

There is no longer any shadow of doubt that if all milk were purchased on a basis of quality all honest advocates of pasteurisation would soon withdraw their support. It is regrettable that those who are in a position to advise the public should show such deplorable apathy towards a question of such vital importance. It would appear that the pasteurisation of milk is advocated by those who are ignorant of the immense strides made in the improvement of the production of milk.

The advocates of pasteurisation fly to New York for evidence in support of their advocacy. We submit that the Americans can teach us nothing concerning the production of clean milk, but they have taught us too much in being content to make a dirty milk safe. Again, the relative distances which milk has to be transported, and the variations in climatic conditions between America and this country, are incomparable. However, to those who fly to U.S.A. for their guidance we will later submit facts and figures.

It may be contended by the advocates of pasteurisation that the attainment of a raw clean milk is an impossibility, but that such aim is not beyond reach is shown by the graph, which contrasts designated with undesignated milk and shows what has been effected in a few years in Staffordshire.

Although the designated and undesignated milks show marked contrast, it is surprising how few of the undesignated milks showed counts above 100,000 bacteria per c.c., and this graph will have an important bearing on what we have to say hereinafter concerning a suitable standard for clean milk.

In the designated milks it will be seen that the highest point which was reached in July was only 24 per cent. of total samples examined that month, which further confirms the ease with which milk can be put on the market with counts under 100,000 bact. per c.c.

On tabulating 1,114 samples of undesignated milk and 527 designated milks, the following results were obtained :—

October, 1927, to September, 1928.

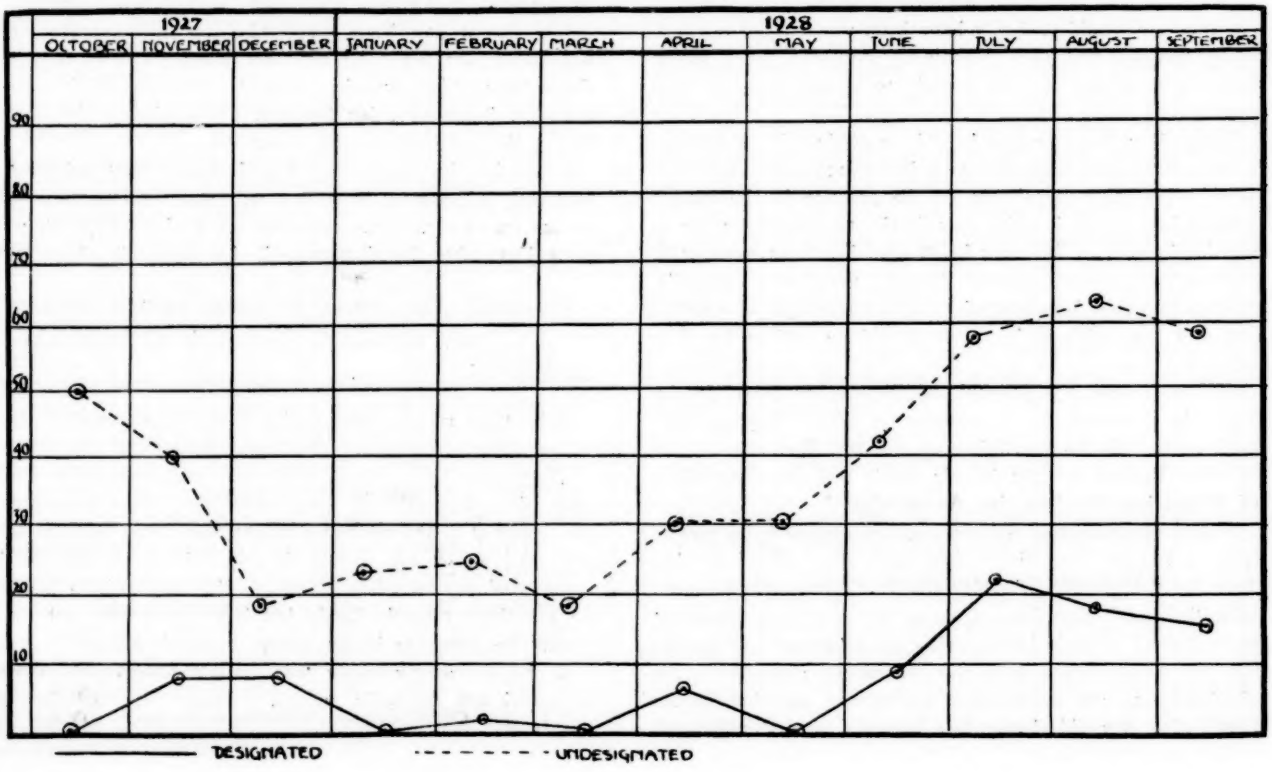
Designated Milks. Bacteriological Count.

	Under 5,000.	Over 5,000, Under 10,000.	Over 10,000, Under 30,000.	Over 30,000, Under 100,000.	Over 100,000, Under 200,000.	Over 200,000, Under 500,000.	Over 500,000, Under 1,000,000.	Over 1,000,000.	Total
	263	81	92	50	18	15	1	—	

B. Coli.

No Coli	207	51	38	14	3	—	—	—	313
1 c.c....	50	18	36	21	4	2	—	—	131
1/100th	6	12	18	15	11	13	4	4	83

Percentage of Samples in each month which showed more than 100,000 Micro-organisms per c.c.



October, 1927, to September, 1928.

Undesignated Milks. Bacteriological Count.

	Under 5,000.	Over 5,000, Under 10,000.	Over 10,000, Under 30,000.	Over 30,000, Under 100,000.	Over 100,000, Under 200,000.	Over 200,000, Under 500,000.	Over 500,000, Under 1,000,000.	Over 1,000,000.	Total
	40	75	233	290	146	165	82	83	1,114

B. Coli.

No Coli	18	16	37	31	4	—	—	—	106
1 c.c....	18	40	123	123	44	23	8	2	381
1/100th	4	19	73	136	98	142	74	81	627

List Showing Increases of Graded Licences Issued to Farmers in the County of Stafford.

	1924.	1925.	1926.	1927.	1928.	1929.
Number of licences in force ...	1	4	8	22	46	64

The contrast between designated and undesignated milks is easily recognisable and the number of samples amongst the designated milks which showed absence of coliform organisms in 1 c.c. is reassuring. Even in the undesignated milks a certain number of samples showed no coliform organisms in 1 c.c., and surely these results can be obtained by producers who are only getting ordinary N.F.U. prices. In the designated milks only four samples out of 587, or 0·6 per cent., were found positive to tuberculosis, with the biological test carried to six weeks, whilst in the case of undesignated milks there were 6 per cent. of positives. This shows the importance and value of routine veterinary inspection of dairy herds.

For the above information and tables we are indebted to Dr. W. D. Carruthers, the County Medical Officer for Staffordshire, who is always ready to see the producer's point of view and to help him in the solution of his problems in clean milk production.

That farmers will produce milk of good quality if they are paid for it is readily shown by the following tables of bacterial counts from The Midland Counties Dairy, Ltd., who have for the past eight years purchased their milk on a quality basis. This firm is largely responsible for the number of licences in Staffordshire.

The results of the purchase of milk on a quality basis should prove of interest to Medical Officers of Health and others connected with the improvement in the hygienic quality of the milk supply, and we propose to elaborate this scheme.

Until the year 1921 this enterprising firm paid a uniform price for the milk to all producers. The first inducement was in 1921, when prizes were offered to farmers sending the cleanest milk. Early in 1922 a laboratory was equipped, and in April of that year the systematic bacteriological testing of all producers' milk commenced, and a bonus was awarded on the results of these tests. At first the bonus was based on the bacteriological count only, but at a later date is was thought advisable to include the test for the presence of lactose-fermenting organisms or coliform bacilli. A scale of marks was then adopted, and full marks given for a low bacterial count with no coliform organisms. Each month the names of the farmers are tabulated on a list in order of merit, the first 15 farmers on the list receiving one penny per gallon extra for their milk, and the next 35 farmers on the list ½d. per gallon. These lists are then published and sent to each producer monthly. The lists sent to the producers each month provide a great stimulus, and in many cases the farmers are keener on having their names high up on the Clean Milk Bonus List than they are on the 1d. per gallon which they receive as extra payment.

Every endeavour is made to educate the producer as to the best methods of handling milk, not only by periodic visits to the farm, but by sending helpful leaflets and books. The farmers who appear continually at the end of the list, and are determined not to improve their methods, are dropped at contract time. Thus, by the regular elimination of those supplying dirty milk, and the careful training of the others, the cleanliness of the milk supply has improved very greatly.

The following tables, showing the actual improvement produced, completely justify the scheme and are, in our opinion, a complete answer to those pessimistic advocates of pasteurisation. We would like you to study these tables very carefully.

Table 1.

Showing the average bacterial count per c.c. over twelve months in the years :—

Position on the list of farmers arranged according to bacterial content of milk.	The Average Bacterial Count per 1 c.c. of Milk in the Years						
	1922.	1923.	1924.	1925.	1926.	1927.	1928.
1st Farmer	4,566	4,286	933	611	591	354	266
36th ,, ...	365,535	211,960	73.751	20,347	7,342	3,647	2,350
60th ,, ...	3,665,311	796,951	390,708	107,609	18,621	7,773	6,866
100th ,, ...	—	—	5,843,740	851,540	130,479	38,966	56,420

Table II.

Showing the percentage number of samples with Bacillus coli absent in 1 c.c. and present in 1, 1/10th, 1/100th, 1/1,000th of a cubic centimetre of milk during the months of January and July, 1927 and 1928.

Year	B. Coli. absent.	Present in :— 1 c.c.	1/10th	1/100th	1/1000th
January.					
	%	%	%	%	%
1927... ...	29·46	25·44	27·25	14·24	4·46
1928... ...	60·6	21·21	13·26	2·65	1·81
July.					
	%	%	%	%	%
1927... ...	22·13	17·94	18·7	12·57	28·62
1928... ...	51·82	16·94	8·63	8·63	13·95

N.B.—Tests for the presence of Coliform Bacillus commenced in January, 1927.

We contend that these results are a direct challenge to pasteurisation and vindicate the advocates of a clean raw milk supply. By purchasing milk on a quality basis one is getting the co-operation of the producer, and by delivering raw milk of a good keeping quality with the nutritional properties unimpaired, one stimulates an increased consumption of milk. It is to be hoped that 'ere long some help will be afforded to dairy farmers by the provision of an improved water supply, without which clean milk cannot be consistently produced; adequate facilities for the immediate cooling of milk are essential in order that the milk which is produced clean shall reach the consumer in good condition.

The importance of cooling milk is shown by the following figures, given by C. W. Moller in *The Milk Industry* of April, 1928.

Milk containing 1,480 bacteria per c.c.

Divided into five glasses for 18 hours :—

(1) Kept at 48·2 F. contained 2,100 per c.c.
(2) ,, 53·6 F. ,, 5,600 ,,
(3) ,, 59·0 F. ,, 156,000 ,,
(4) ,, 64·4 F. ,, 550,000 ,,
(5) ,, 69·8 F. ,, 6,750,000 ,,

Table III.

The average percentage number of farmers supplying milk containing less than	1922.	1923.	1924.	1925.	1926.	1927.	1928
	%	%	%	%	%	%	%
10,000 Bacteria per 1 c.c. ...	4·9	10·5	15·5	24·0	40·8	59·0	59·7
30,000 ,, ,, ...	16·2	30·6	33·4	44·4	62·9	80·5	73·7
200,000 ,, ,, ...	54·5	60·3	68·8	74·3	86·6	94·1	87·2

Table IV.

	Nov., 1927.	Mar., 1928.	Sep., 1928.	Mar., 1929.	Sep., 1929.
	%	%	%	%	%
% of heat treated	94·0	91·3	89·3	85·3	84·1
% of total graded Milks ...	6·0	8·7	10·7	14·7	15·9
	100·0	100·0	100·0	100·0	100·0

From Table 1 it will be seen that whereas—

In 1922 the 1st farmer had a bacterial count of 4,566.
,, 1929 ,, ,, ,, ,, ,, ,, ,, only 225.
,, 1922 ,, 60th ,, ,, ,, ,, ,, 3,665,311.
,, 1929 ,, ,, ,, ,, ,, ,, ,, only 6,866.
,, 1924 ,, 100th ,, ,, ,, ,, ,, 5,843,740.
,, 1929 ,, ,, ,, ,, ,, ,, ,, only 56,420.

From Table 2 it will be seen that the percentage of senders with coliform organisms absent in 1 c.c., in January, 1927, was doubled in January, 1928, and that the percentage of senders with coliform organisms absent in July, 1927, was more than doubled in July, 1928.

It will be seen that whereas in January, 1927, 14·24 per cent. senders had Coliform in 1/100th c.c., in January, 1928, only 2·65 per cent. senders had Coliform in 1/100th c.c.

Table 3 is also illuminating; it shows that whereas in 1922 less than 5 per cent. of the producers were sending milk with less than 10,000 bacteria per c.c., in 1928 the percentage had increased to nearly 60.

Table 4 shows the increase in the sales of graded milks, as opposed to heat-treated milk, from the Midland Counties Dairy, Ltd. This increase in directly due to the increased confidence of the distributor and consumer in the quality of the milk produced and paid for on a quality basis. This confidence on the part of the consumer has resulted in an increase of 30 per cent. in the sales from this dairy in the last 12 months.

By the sampling of milk from the same group of farmers over a period of five years, Dr. Stenhouse Williams and his family of co-workers have shown the desirability of immediate cooling of milk to a low temperature, especially in the summer months.

From the above it will be seen that the production of a raw clean milk with a low bacterial count and the absence of coliform organisms is a practical proposition without the aid of heat or preservative.

Let us now turn to the subject of pasteurisation.

We have recently been reading a trade pamphlet by one of the world's greatest dairy engineers in which he gives really alarming facts and figures dealing with the contamination of milk during and subject to the process of pasteurisation. The report gives information and data relating to 189 samples of pasteurised milk as delivered to consumers in 15 different areas. Of these 189 samples, 40 were found with counts exceeding the maximum count permitted by the Ministry of Health by 2½ to 251 times, *viz.*, up to 25,000,000 bacteria per c.c.—over 20 per cent. were grossly worse than the standard; 62·5 per cent. of the samples examined were contaminated with coliform organisms. In one Metropolitan Borough consuming 6,000 gallons of milk a day, out of ten counts only four were within and some only just within the count of 100,000 bacteria per c.c. permitted by the Ministry. The other six counts were 107,500, 256,000, 570,000, 780,000, 790,000 and 912,000; eight of the ten samples contained coliform organisms. We would ask you to compare these results with the graph and tables of fresh raw milk shown above.

In further support of the failure of pasteurisation to achieve its purpose, we would mention an epidemic which occurred in Montreal in 1927, in which there were 7,755 typhoid cases produced by pasteurised milk, involving 453 deaths.

Again, we know from experience that coliform organisms survive in pasteurised milk, and, as you are no doubt aware, the tubercle bacillus is more resistant than these coliform organisms. It is our contention that the tubercle bacillus can survive pasteurisation though its virulence may be temporarily weakened and its biological effects delayed. We regard this as a snare and not a benefit and we are of opinion that if inoculated guinea-pigs were allowed to live for three months instead of six weeks more positives would be obtained in pasteurised milks. It is important to remember that a considerable amount of experimental work upon which the thermal death point of the tubercle bacillus is based has been done with artificial cultures and we hold that this method is no criterion of the lethal effect of heat on the tubercle bacillus as it occurs under natural conditions, where it is protected by a liquid envelope, by caseous material and by albuminous exudate. We also believe that tubercle bacillus in culture, *i.e.*, tubercle bacillus as a saprophyte, has a lower thermal death point than the true parasite.

Furthermore, the pasteurisation of small quantities of milk under perfect scientific conditions is a vastly different thing from the routine commercial pasteurisation with its many pitfalls. Professor Beattie, as a result of his examination, states that pasteurisation as practised commercially in this country is not likely to destroy the common disease-producing organisms.

Conn and Haverill both admit that *B. tuberculosis* may remain alive even in carefully-pasteurised milk.

Captain S. R. Douglas has demonstrated conclusively that commercial pasteurisation is useless and that it only serves the purpose of enabling the middleman to distribute a milk of poor keeping quality to the consumer before it goes sour. He also points out that the natural bactericidal power of milk is very susceptible to heat and is destroyed at 65° F.

Authorities are at variance concerning the detrimental physical and biochemical effects of pasteurisation on milk, but we do not think that the following facts can be disputed.

Mr. Mattick has demonstrated that the cream line is reduced and gives the following figures :—

Reduction of 7 per cent. at 143° F.
" 10 " " 145° F.
" 40 " " 148° F.

Professor Schryver believes that the calcium and phosphorous content of milk is affected by pasteurisation, and in support of the chemical changes produced by the process we would like to stress the findings of M. Ladd, H. W. Ewarts, and L. W. Franks on the relative efficiency of certified and pasteurised milk for infant feeding, for they found that certified raw milk alone produced a greater increase of bodyweight in babies than did pasteurised milk alone or combined with orange juice and cod liver oil.

This table shows that the normal development of the babies, as judged by weight, increased 14 per cent. on certified raw milk, as against 7 per cent. on pasteurised milk alone, 7·9 per cent. on pasteurised milk with the addition of orange juice, and 9·5 per cent. on pasteurised milk with the addition of orange juice and cod liver oil.

The Table is as follows :—

	Months observed.	Weight Development. At entrance.	At one year.	Gain in percentage.
		Per cent.	Per cent.	Per cent.
Group I (61 cases) Grade "A" pasteurised Cod Liver Oil 0 Orange Juice 0	6·9	82·1	83·8	1·7
Group II (59 cases) Grade "A" pasteurised Cod Liver Oil 0 Orange Juice +	7·2	82·2	90·1	7·9
Group III (72 cases) Grade "A" pasteurised Cod Liver Oil + Orange Juice +	7·0	80 2	89·7	9·5
Group IV (17 cases) Certified Raw Milk Cod Liver Oil 0 Orange Juice 0	6·8	80·0	94·0	14·0

A. L. Daniels and J. Stearns found that when rats were fed on pasteurised milk their growth was half the normal.

Hess and Fish report an outbreak of scurvy among babies fed on milk pasteurised at 145° F. for 30 minutes.

Professor Armstrong states " Pasteurisation is clearly a process which has been carried out in the interests of the trade, not in the interests of the farmer in the sense of leading the farmer to produce a clean milk. Its effect is against that. I have been to Reading to see in detail what is being done there in the way of producing a sound milk. They are most successful and I think what Reading does to-day the country at large ought to do to-morrow, and might do to-morrow if the authorities would take proper action. It is my considered opinion, as the result of many years thought on the subject and a good deal of experience with infants, that it is making milk dangerous and not safe."

Dr. Somerville Hastings urges that all pasteurised milk should be sold in coloured bottles or, alternatively, that harmless colouring matter should be added to the milk so that the public would know that the milk they are purchasing had been pasteurised at least once and was not the pure unsophisticated product they imagined it to be. (*Dairy World*, Nov. 16th, 1929, p. 348.)

T. G. Stapleton, President of the British Dairy Farmers' Association, on returning from U.S.A. said that " the risk of contamination after pasteurisation was astounding." He gave as his reason for its continuance as a process, the fact that an immense amount of capital was invested in these engineering concoctions—the engineers were doing big business and making big profits.

We would like to conclude our quotations with one expressed by the distinguished president of this society.

Lord Dawson states " Pasteurisation may be necessary—it may even be good, but we can never insist too strongly or too often that pasteurisation can never make bad milk into good milk. It may save milk from being constructively bad, but what health demands is that milk

should be constructively good, and that can only be accomplished by the proper handling of the milk at every stage from the cow which produces it to the human who consumes it."

By now you will probably have suspected that we are against pasteurisation, and we give the following reasons :—

(1) The cream line is reduced at the required temperature. No consumer likes a small cream line, still less does he like no cream line at all, so that homogenising does not solve the problem. It is our considered opinion that where such a gross physical change is produced, the tendency of the trade will be to underheat the milk. The danger of this is shown by the results of experiments at the Reading Institute where no less than 10 out of 12 known tuberculous milks were virulent after pasteurisation at 139° F. for 20 mins.

(2) Where such a gross physical change can be produced, concomitant chemical changes are also likely to occur, some of which have been determined.

(3) Efficient pasteurisation destroys the bacteriocidal substances in milk, so that when contamination occurs after the process, as it very frequently does, there is no control over the multiplication of the bacteria.

(4) Efficient pasteurisation removes the *Streptococcus lacticus* from the milk, which has also inhibitory influence on other organisms.

(5) Efficient pasteurisation permits a stale milk to be sold as a fresh milk, and although one pasteurisation does not destroy the other vitamins they may become weaker in a stale milk through oxidation and reheating.

(6) Efficient pasteurisation removes the anti-scorbutic vitamin C.

(7) Even efficient pasteurisation does not kill the sporing micro-organisms, and inefficient pasteurisation facilitates their development.

(8) We are against commercial pasteurisation because it fails to achieve what it claims, and the various high counts quoted show that it is a danger and not a safeguard.

(9) We are against pasteurisation because there is a great temptation to submit very dirty milks to the process in the belief that they will be rendered clean, but heat exerts its effect in inverse ratio to the number of micro-organisms present. Besides, we do not fancy pasteurised manure or a bacterial cemetery.

(10) Pasteurisation tackles the problem from the wrong end—prevention is better than cure. It is only procrastination and does not solve the problem of a clean milk supply; it is a direct incentive to slovenly methods of production. It is an admission of failure, a policy of weakness and a counsel of despair. Lastly, it does nothing to mitigate the grave economic loss to the producer caused by the spread of tuberculosis amongst cattle.

Recommendations.

We have adversely criticised pasteurisation. We will now offer you some recommendations for your consideration.

(*a*) An immediate revision of the Milk (Designations) Order, 1923, from which pasteurised milk will be excluded.

(*b*) We suggest that milk be classified as follows :—

Grade A.1.—Milk from cows which have passed the tuberculin test. This milk shall not contain more than 30,000 bacteria per c.c. and no coliform organisms in 1/10th c.c. The milk must be subjected to the biological test for tuberculosis before the licence is issued, and at least once every three months thereafter. The sample to be taken under supervision of a Veterinary Inspector.

Grade A.2.—Milk from cows which are subjected to periodic clinical veterinary examination, instead of the tuberculin test, otherwise as for Grade A.1.

Standard Milk.—Shall not contain more than 100,000 bacteria per c.c., and no coliform organisms in 1/100th c.c. Milk to be subjected to biological test as for Grade A.1.

(*c*) We suggest that the words " form part of or " occurring in line three, paragraph (1), subsection A, part 3, of the Milk (Special Designations) Order, 1923, should be deleted forthwith, as their inclusion constitutes a real hardship to intending producers of Grade " A " (T.T.) Milk, and is a direct deterrent to the establishment of the highest grade.

(*d*) That the words " and the day of production " occurring in line six, paragraph (2), subsection B., part 3, of the Milk (Special Designations) Order, 1923, be deleted as they serve no useful purpose, the quality of the milk being controlled by the bacterial count, and the absence of coliform organisms. The inclusion of these words reacts unfairly on the enterprising producer and distributor of graded milks as compared with the producer and distributor of ungraded milks who is not similarly restricted.

(*e*) That all milk should be purchased on a quality basis, *i.e.*, bacterial content, absence of coliform organisms, and percentage of butter fat.

(*f*) That, should any pathogenic micro-organism be discovered in the milk, immediate steps be taken to trace the animal and remove it from the herd.

(*g*) That the Government should bear the cost of testing dairy herds, and that all reacting cows over ten years of age should be slaughtered, as they are chiefly responsible for the dissemination of the tubercle bacillus.

(*h*) We hope that eventually the vaccination of calves with B.C.G. will prove efficient, in which case the whole problem of tuberculosis-free herds will be solved.

(*i*) We would suggest more intensive propaganda to educate the public, as we consider it is unfair that producers should lay out large sums of money to secure the highest grade of milk if the public do not realise the advantages of the different grades.

Record in Cattle Tuberculin Testing.*

" More cattle were tuberculin tested in November, 1929, according to the U.S. Department of Agriculture, than in any month during the eradication campaign begun in 1917. The total number of tests made by the state and federal veterinarians in November was 1,207,573; of this number 17,567, or about 1·4 per cent., indicated the presence of tuberculosis in animals. The large number of cattle tested was due to the fact that the eradication work was begun in a large area in the extreme northern part of Minnesota; several of the counties have already been designated as modified accredited areas. The department says that the campaign to eradicate tuberculosis, including the removal and slaughter of more than 1,500,000 reactors, has had no adverse effect on the milk supply of the United States; on the contrary, there has been a material increase in the total production and *per capita* consumption of milk." —*Journal of the American Medical Association*, January 25th, 1930, p. 273.

*The test was presumably the single intradermic test commonly used in U.S.A.

Clinical and Case Reports.

A Preliminary Note on "Avertin" Anæsthesia, in the Dog and Cat.

By J. G. Wright, F.R.C.V.S., Professor of Pharmacology and Therapeutics, R.V.C., London.

"Avertin" was introduced into therapeutics by the Bayer Products Company as a basal anæsthetic and narcotic for use in the human subject. Chemically it is tri-brom. ethyl alcohol, CBr_3CHO.

The striking results obtained in the human subject by medical anæsthetists, who claim that it is now quite out of the experimental stage (*Vide*: *Proc. Royal Society of Medicine*, Section of Anæsthetics, December, 1929) encouraged me to use it upon our dog and cat patients as a general anæsthetic.

Up to the present I have used it in ten surgical cases and the results already obtained point to the fact that it is to occupy a definite place in veterinary anæsthetics in the future.

It is administered per rectum into the colon. The onset of anæsthesia occurs in from 3-5 minutes. A little care is necessary in the preparation of the 3 per cent. solution of "Avertin" used, but apart from this the technique of administration is simple. No preliminary narcosis is necessary and my experience so far shows it to be devoid of undesirable after effects.

Considerable care has been taken in arriving at the correct dose for the human being and this is put at ·1 gramme per kilogramme body weight. I have found this insufficient for our subjects and at the moment am using ·4 gramme per kilogramme body weight for the dog and ·3 gramme for the cat.

I have used it in animals varying in weight from 5½ lbs.-30 lbs. and so far with consistently successful results. I have had no evidence of toxicity. The operations performed under its influence have varied from removing a foreign body from the pharynx in the cat, to ovaro-hysterectomy in the bitch. It might be interesting to state that during such operations no form of restraint, such as tapes or hobbles, has been used.

I propose to deal fully with the subject and to record my cases in detail in a paper to be discussed before the Central Veterinary Society in May of this year.

An Unusual Mandibular Fracture in the Dog.

By W. P. Blount, M.R.C.V.S., Edinburgh.

Some months ago I was asked to see an aged, male, fox terrier with the following signs:—

He had refused all solid food for several days, but with difficulty would take liquids. He would cry out in evident pain if the head were stroked or "patted," and it was this sign which made the owners of the dog wonder if he had been kicked or otherwise injured at the back of the head.

In order to avoid unnecessary disturbance, the patient was removed to the surgery for examination.

The mandible was found to be fractured on both sides just anterior to the "angle," and the inability to swallow allowed an accumulation of saliva at the lips. The teeth were in a very unhealthy condition, accumulations of tartar obliterating the normal appearance. The gums were soft and bleeding, the tongue was brown, and the breath foul.

A hurried *post-mortem* revealed no outstanding characters. The mandible at the site of fracture could be cut with an ordinary scalpel, whereas nearer the symphysis the presence of true bone made this impossible.

It would appear as if the local stimulation of the osteoclasts had produced a rarifying ostitis of the mandible in the region of the molars; but there is the possible explanation that the absorption of toxins by the alimentary canal from the teeth had produced a general softening of the osseous system, and that it was coincidental that the mandible should fracture, presumably through the dog attempting to bite some hard substance.

The "Scrub" Bull Menace.

England, the long-vaunted nursery of the world's best pedigree breeds, is to-day the home of the most outrageous types of cattle, which would be "canned" were they to pass through the hands of the American packers. Failing legislation, in the shape of a bull scheme moulded upon that ruling in Ireland, farmers must, for their own sake, band together in communities and purchase their own bulls. There should not be one village in Great Britain without its pedigree bull.—*Daily Telegraph.*

H.M. Stationery Office Publications.

The undermentioned have been published recently. Copies can be purchased through any bookseller, or directly from H.M. Stationery Office, at the following addresses:—London: Adastral House, Kingsway, W.C.2, and 28, Abingdon Street, S.W.1; Cardiff: 1, St. Andrew's Crescent; Manchester: York Street; Edinburgh: 120, George Street.

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Civil Service Commission:—		
Examination Papers:—		
Agriculture and Fisheries, Ministry of:—		
Veterinary Inspector. Pamphlet containing the Question Papers of an examination held in November, 1929. (25-0022-00-29)	1 6	1 7

Report of the Weinberg Pen Trials Committee.

On January 14th, 1930, the above Committee met at Islington Cattle Market to consider the durability test which had been arranged by the Markets Committee of the Corporation of London on the Weinberg Casting Pen which had been installed specially for trial at the Abattoirs, Islington Cattle Market.

There were present Professor F. T. G. Hobday, in the chair; Mr. A. D. Bray, chairman, and Mr. F. Whittingham, ex-Chairman of the Markets Committee; Mr. J. R. Hayhurst, Superintendent and Chief Veterinary Inspector, and Mr. A. Lloyd, Assistant Veterinary Inspector, Metropolitan Cattle Market; Lt-Col. T. Dunlop Young, Chief Veterinary Inspector, Central Markets, Smithfield; Capt. H. L. Torrance, Veterinary Inspector, Birkenhead; Professor A. Gofton, Chief Veterinary Inspector, Edinburgh; Major W. Brennan DeVine, Chief Veterinary Inspector, Birmingham Corporation; Capt. W. K. Johnstone, Chief Veterinary Inspector, Manchester Abattoirs; Major-General Sir John Moore; Dr. Samuel Daiches, Board of Deputies of British Jews; Mr. E. Zeitlyn, Chairman of the Shechita Committee, Board of Deputies of British Jews; Mr. J. Levitta, Chief Schochet; Dr. N. S. Lucas; Mr. L. A. Legros, Consulting Engineer to the Board of Shechita; Mr. Hill, representing the Slaughtermen's Branch of the Union of Allied Workers; Mr. R. Paddison, representing the R.S.P.C.A.; Miss Violet Wood, Secretary to the Council of Justice to Animals; and Capt. C. W. Hume, Secretary to the University of London Animal Welfare Society.

The meeting was preceded by a series of demonstrations on a variety of cattle, ten in number, including bulls, as a conclusion to the durability test of the machine in respect to 200 cattle of varying sizes and weights including Highland cattle with long horns, shorthorns, polled breeds, large bulls and young bulls. During the durability test, which covered several weeks, it was arranged through Mr. J. R. Hayhurst that only the following persons should be admitted to the slaughter house:—Professor Hobday, Sir John Moore, Mr. Legros, Dr. Underwood, engineer acting for Mr. Weinberg (or his assistant Mr. Hollis) and Mr. Weinberg himself. Professor Hobday and Sir John Moore undertook to be responsible for any matters which might arise and to deal directly with the carcass butchers and slaughtermen in connection with any difficulties during the test.

A report on the trial was submitted by Sir John Moore to the following effect:—

The Chairman of Committee, Weinberg Casting Pen.

Dear Sir,—By arrangement made through Mr. J. R. Hayhurst on behalf of the Cattle Markets Committee, I beg to report that I was one of the delegates appointed to supervise the durability test of the Weinberg Casting Pen, the test to be made on 200 animals of varying breeds and sizes, including a proportion of bulls.

"I paid as many visits to the Islington Cattle Market and Abattoirs as circumstances permitted, and have much pleasure in giving my opinion of the trial as follows:—

(1) "From personal observation of the method and a consideration of the times carefully taken by Mr. Legros and Mr. Hollis on behalf of the Trial Committee, I have no hesitation in saying that the Weinberg Casting Pen has not only proved its durability but that it is an efficient and safe method of dealing with animals for slaughter. From a time point of view in handling for despatch it carries advantage over the usual methods of slaughter; it is moreover easy to work, and is safe for slaughtermen.

(2) "What, to my mind, is its chief merit is that it is a most humane system of handling animals for slaughter, a matter which I most strongly desire to emphasise. I am sure that all who have a regard for animals are anxious that their slaughter for purposes of food should be carried out in as humane a manner as possible, fully realising that present methods in many instances are susceptible of improvement. The Weinberg Casting Pen supplies a desirable necessity whether considered from the Jewish standpoint or otherwise.

(3) "In my opinion the system, which the Weinberg Casting Pen serves to show, could be perfected. It would be possible, for instance, for the apparatus, or an improved apparatus, to be worked by electricity, silently, slowly revolving, stopping as desired, etc., in as easy a manner for example as the ordinary 'lift' in houses of business. Rough handling would be reduced to an absolute minimum, and bruising altogether avoided."

(*Sgd.*) J. Moore.

. . . . . .

The following are extracts from the report, which is too long to publish in full:—

Mr. Hill: I wish to know whether the men in any way obstructed or whether they collaborated in the tests?

Sir John Moore: The men carried out their duties most efficiently. They did not obstruct in any way. It seemed to be their desire that the work should proceed as smoothly as possible. A certain amount of thanks is due to the men for their part in the working of the pen.

Prof. Hobday: I can absolutely support all that Sir John Moore has said in regard to the men. They have worked well. Mr. Weinberg has also said how very well he has been supported in his effort for the machine to have a fair trial. Everything has been carried out from the men's point of view, and from every other point of view, without any complaint.

Durability of Machine.

Prof. Hobday: Nothing has been done to the machine during the tests except the tightening of a few bolts. Both Mr. Legros and Mr. Hollis are satisfied with the machine.

Mr. Paddison: Has the durability trial made any material difference to the machine? The question is not what the pen is, but what it is likely to be.

Mr. Legros: You ask whether the machine is so designed that it will last for a considerable time in addition to what we have seen. There is nothing unmechanical about the machine, such as might cause failure from fatigue. It is a machine which should stand for a number of years with, of course, the usual periodical overhauling.

Humane Aspect.

Dr. Daiches: I saw the machine for the first time to-day and was very much impressed by the smoothness of its working.

Prof. Gofton: I should like to congratulate Mr. Weinberg on the great improvement in the working of the machine as compared with the last time I saw it at the Islington Slaughterhouse two years ago. It did at that time leave room for criticism. To-day it has worked wonderfully. For myself I am quite satisfied that the method is a great improvement on the existing method of casting for Shechita. More particularly from the humane standpoint is it a great improvement on the existing method. I should like to go the whole length and say that it should be adopted, or recommend its adoption. I think there are some relatively small details to be attended

to, and I should like to stop a little short of recommending the adoption until these details have been introduced into the machine.

Resolution proposed by Prof. Gofton :

That this Committee is satisfied that the Weinberg Machine, as demonstrated both by the durability test and the final trial held to-day, fulfils the objects for which it is designed; and constitutes a great improvement from a humane standpoint on existing methods of casting animals for Shechita; and recommends its adoption in place of present methods.

The resolution was seconded by Mr. Paddison.

Major Brennan DeVine : The machine, as we can see, is a very great improvement on the present methods of slaughter from the humane and business points of view—the saving of time and the safety of the slaughtermen. I think this machine should be recommended by the Weinberg Committee as a good thing, and that it is a great improvement on the present method of casting. We may also take it that the Jews in different parts of the country will make improvements. I have no hesitation in supporting the resolution that it be recommended for use as a great improvement on the present method.

Mr. Zeitlyn : I should like to associate myself with the remarks of the last speaker but one, that this Committee should recommend the adoption of the Weinberg Machine. I am bearing in mind the report of Sir John Moore and the recollection of his commendation that " it is an efficient and safe method for dealing with animals for slaughter," on which he has laid emphasis. I have no doubt that the improvements which are suggested are not improvements which have anything to do with the efficiency of the machine but to the development of the machine. Those are things which are incidental. If this Committee thinks, as Sir John Moore thinks, that it is a most humane method I think there should be no delay in telling the world at large that it is an improvement and we ought to use it. I am thinking more particularly of the effect upon those who would like to adopt some method which would place them beyond reproach; and I should be very glad, in view of the position I occupy, if the Committee should arrive at a decision which is unanimous.

Mr. Hayhurst : It is the third time this machine has been installed at Islington, and as a result of the last meeting I have been instructed to place no obstacles in the way. Sir John Moore has told you that as soon as the durability test was arranged we left the matter in independent hands. There is no doubt about the Corporation wanting to go the whole way. I am satisfied in my own mind that to continue with the present method is wrong; that however careful some of the operators might be in this we must not place our trust in the human element. I have watched and, without blame to the cutters, I am satisfied we should be taking no risks whatever. This machine is efficient and it should be adopted throughout the country. I state this clearly, because unless the Board of Shechita adopts this throughout the country, and at the same time, it will not get the results required. It is the duty of the local authorities to provide accommodation for the machine which is the most efficient and it would be a wrong thing not to do so. I say that it must be universal and adopted at once. There should be no occasion for any carcass butchers to go elsewhere to slaughter. There is no intention of window dressing by the Board of Shechita. It should be adopted throughout the country. If it is more humane it is a wrong thing entirely to continue the old method which is not as humane. I support entirely this new method, having satisfied myself in these two years. We must use a mechanically-operated machine.

Mr. Whittingham : I have seen these trials from the commencement. I would like to compliment Mr. Weinberg on the progress he has made with his machine. I think he has made a great advance. I do not think this Committee would be right in stating that this machine ought to be the only one in use. If the Shechita Board adopts this machine for use for a certain time it will stop other people from inventing machines.

Prof. Gofton : We will maintain an open mind with any other invention.

Col. Dunlop Young : I quite agree with my friend, the Chairman of the Committee, and I wish to support it with all my strength. If this machine is going to be adopted by the Shechita Board, what power have we to say whether it is going to be in use in Islington and in other parts of the country? It should be in use in every place where the Jewish method of slaughtering is, and be compulsory. I watched very carefully a man holding down an animal's head and it seemed to me that if it is not a powerful animal the danger is not very great, but if the opposite takes place and the animal is very powerful and lifts its head there is an element of danger to the man who is holding down the head.

Ritual Aspect.

Mr. Levitta : I have been present at every test of the Weinberg Casting Machine carried out at Islington and found the following points worthy of immediate consideration :—

(1) The machine has been somewhat improved by the suggestion I made some time back, in so far that the neck of the animal is now more exposed. There is, however, room for more improvement in this direction.

(2) The machine in its present form is very inconvenient for the cutter, since he is compelled to stand on the animal's left and can therefore draw tight the throat hide with his left hand only in the wrong direction; thus experiencing great difficulty in cutting.

I therefore make the following suggestions :—

To overcome the first obstacle, the pen should have a larger gradient so that still more of the neck be exposed, at the opening in the front, to the cutter.

To overcome the second, the cylindrical body of the machine be made to rotate through only a quarter of a circle; thus putting the animal on its side instead of its back, and bringing the head very near the cutter. Furthermore, the roller path near the head should be moved further towards the other path, thus permitting the cutter to stand on the right of the animal, with ample room for his left hand to draw tight the throat hide from the head downwards—an essential process for carrying out an important Shechita regulation. This correction may bring the head of the animal considerably higher than at present. To overcome this the roller paths should be fixed flush with the ground instead of nine inches above the ground as at present, and a slightly higher box or platform be used under the animal's head to supplement the difference incurred.

. . . . . .

Vote of thanks to Mr. Hayhurst and the Markets Committee for the facilities which they have placed at the disposal of the Committee.

Professor Hobday (Proposer).—Nobody could have taken more trouble than Mr. Hayhurst and the Markets Committee. Without their help we could not possibly, of course, have had the trial, but without their co-operation we could not possibly have carried the trial to its present stage.

Mr. Hayhurst.—Thank you very much, but all that I have done has been on behalf of my Chairman. The Markets Committee recognised they were the largest Jewish slaughtering establishment in the country, and all that I have done has been under their instructions. I am very pleased to be here to-day. Mr. Bray is present and will tell you that the Committee wished to help the Board of Shechita.

Mr. Bray.—I can assure you that the City Corporation are ever ready to render their help and assistance to anything which might be to the benefit of the community. I am very pleased that Mr. Hayhurst has given you the satisfaction which you have expressed. We knew he would desire to do that for the benefit of the community and for all concerned, and we shall be quite satisfied if

you make a success of your project, if it is of advantage to the public and trade in general.

. . . . .

The Committee desired to express its keen appreciation of the action of the Board of Shechita, who have spared no expense in order to obtain a satisfactory trial of the Weinberg Pen. They also desired to record their indebtedness to Mr. Simon Myers, the Chief Investigating Officer, for the great trouble he had taken.

Review.

[**Diet and the Teeth. Part I.—Dental Structure in Dogs.** By May Mellanby. Published by the Medical Research Council. Price 17s. 6d.]

We have under review Part I of "Diet and the Teeth," a volume of 305 pages exclusive of 54 pages of art plates. It is a most valuable and instructive work which gathers up and makes proper presentation, as a whole, of Mrs. Mellanby's well-known studies (undertaken during the last 11 years) of the relations of diet to the structure of the teeth and jaws in dogs.

The report is the first of a series of three, and will be followed by Part II, which deals with the dental structure in animals other than the dog, and with the production of dental disease. Part III will be concerned with human teeth, and the part played by diet in their proper development and formation, and in the resistance they offer to disease.

Part I may be regarded as a remarkable contribution to natural history, and certainly it can hardly fail to be of intense interest to all readers who are members of the medical, veterinary or dental professions.

Mrs. Mellanby explains fully why it is that dogs have been the animals of choice for the investigation. Their use has not only led to the important advances in knowledge that are therein described, but has also given the clues which have led directly to the recent progress in our knowledge of dental disorders in human beings, of which an account will be given in Part III.

This is only another instance of the value of the study of the dog to man, and here again—as in other instances—the resulting knowledge has brought benefit to the dog himself as well as to mankind; not an equal benefit, because dogs do not suffer from caries as children or their elders do; but for dogs themselves, as for mankind, the new knowledge has brought more effective practical powers of securing full and healthy development of the teeth and of the parts that surround them.

Briefly to summarise the contents of the work, we find that Chapters 1 to 4 give a description of the experimental methods adopted, and a detailed account of the dentition, of the normal processes of development, eruption and shedding of the teeth in dogs, and of the variations of these processes dependent upon such factors as the size and breed of the dog.

Chapters 6 and 7 show that the character of the teeth and jaws, as regards both their general development and their microscopic structure, can be greatly influenced by diet; that the development of perfect teeth can be ensured by an adequate supply of vitamin D either as found in natural foods, or as artificially produced in foods by irradiation of their ergosteral content, or even by irradiation of the animal's skin.

The beneficial or deleterious effects of certain foods upon calcification are fully discussed in Chapters X, XI and XII. The effect of environment or development of the teeth is discussed in Chapter XIV; the effect of irradiation in Chapter XV; and finally, in Chapter XVI, the effect of ante- and post-natal feeding on the teeth of the offspring.

We must pay tribute to the excellent work of Mr. George Payne, to whose skill the author acknowledges her indebtedness for the microscopic sections of enamel, for radiographs and for photo-micrographs which appear with such clarity and profusion in the report.

Veterinary practitioners would be well repaid by a perusal of the work, and we look forward with considerable interest to the appearance of Part II.

H. K.

In Parliament.

Tuberculin-tested Cows and Cattle Shows.

Mr. Greenwood, in a reply to Mr. Christie on February 27th, said he had informed producers of certified and Grade A (T.T.) milk that he could not in future consent to the temporary withdrawal of animals from licensed herds for the purpose of sending them to a show unless the show was restricted to tuberculin-tested cattle. Conditions at shows where both tested and untested animals were housed involved serious risk of infection to the tested animals. He had consulted the Minister of Agriculture before coming to this decision.

At the House of Commons on March 4th, the Conservative Agricultural Committee decided to make representations to the Ministry of Agriculture against this decision. Miss Lawrence told Dr. Vernon Davies, on March 5th, that is was possible, by exercising sufficient care, to obtain clean milk from cows living in defective cowsheds, but there was more difficulty in producing clean milk in unsatisfactory surroundings, and for practical purposes the structural conditions laid down in the Milk and Dairies Order were the minimum that should be required as a basis for the production of clean milk. In answer to a further question by Dr. Davies, Miss Lawrence said that the only satisfactory test for tubercle bacilli in milk was one which took several weeks to carry out, and it was therefore necessary, in order to obtain the maximum possible safeguard, to lay down conditions as to the testing of the cattle and their isolation from untested animals. When a cow was found to be tuberculous it was rarely possible to determine how she had become infected, but the association of tested with untested animals at a show involved a risk of infection unjustifiable in the interests of consumers.

On March 13th Brig.-General Brown asked the Minister of Health whether he consulted the British Dairy Farmers' Association before issuing the circular which required certified and Grade A (T.T.) herds to be completely isolated from all other cattle; and what was their opinion. Mr. Greenwood replied "Yes, Sir. The matter was discussed with representatives of the Association, who stated that it was not practicable at their show to make the arrangements hitherto required by my Department as essential for the separation of tested and untested animals. As it appeared that similar difficulties existed at other shows, I felt that it would be inconsistent with the provisions of the Special Designations Order of 1923 to allow the exhibition of tested animals at shows at which untested animals were also exhibited, and I accordingly issued the circular referred to in the question."

Abstracts.

[**New Observations regarding Rabies in the Cock.** Remlinger and Bailey. *Bull Acad. Vet.* France. Oct., 1929. Vol. II. p. 286.]

In a paper published in the annals of the Pasteur Institute in February, 1929, the authors showed that a cock bitten by a rabid dog might develop rabies. They showed that the period of incubation might be long or short, and that the disease might assume one of three forms—furious, paralytic or abortive (" fruste ").

Birds suffering from the furious form may transmit the disease to other animals, and even to human beings, by pecking. The authors give three references to cases in human beings.

With a view to gaining an insight into the forms in which rabies may show itself clinically in poultry, the authors have carried out a number of inoculation experiments using exclusively " street " virus—the virus which is encountered in ordinary practice.

One of the cases of human beings having been bitten by a rabid cock referred to by the authors was originally published by Schwemburg in 1928, and in that case the bird showed true furious rabies, pouncing on other birds and pecking them savagely, attacking dogs and cats, and finally attacking the child, aged 15 months.

The present authors have not encountered a typical case of furious rabies, but they give detailed descriptions of two experiments in which intracerebral inoculation with street virus produced, after periods of incubation of 24 and 105 days respectively, attacks of rabies which were primarily of a paralytic type, but which show periods of fury. One of the birds recovered and the other died. The virus was recovered by passages from the latter, and Negri bodies were detected in the brain.

The authors have not succeeded in producing infection in more than about 30 per cent. of the birds inoculated, and in their opinion these variations are due to differences in the viruses employed.

In the majority of their experiments rabies of a paralytic type was produced. The clinical picture was rather variable. In some cases loss of equilibrium was pronounced, and in others there was definite paralysis.

In a certain number of cases the experimental inoculations produced a type of rabies which could not be classed either as furious or as paralytic. These cases were characterised by unwillingness to fly, a somewhat raucous voice and difficulty in picking up grain; in fact, one would not have thought that they were cases of rabies from clinical examination. The recovery of the virus from the brains, however, proved their nature. This is the type of cases to which the authors refer as abortive.

In all, the authors give full details of nine birds infected by inoculation. The periods of incubation ranged from 8 to 105 days, and the disease ran its course in periods ranging from 2 to 13 days. It was also found that recovery may take place. This occurs in about 50 per cent. of cases. The authors confirm a finding of Levaditi that though the disease may prove fatal it is not invariably possible to recover the virus from the brain. [Levaditi terms this " Fatal auto-sterilisable neuro-infection."]

The onset of the symptoms is generally sudden. Dulness, somnolence, ruffling of the feathers, ataxic gait, and rigors are general symptoms. In some cases the feathers of the whole body are ruffled, but in others it is only those of the neck, and the bird is described as appearing to have a sleeve on its neck.

In those cases in which furious symptoms predominate, excitability and aggressiveness, clonic spasms of the whole musculature, epileptiform seizures, and cries indicative of acute distress are the most obvious. The cases in which the paralytic form predominates are more difficult to recognise. Loss of equilibrium, unwillingness to move, a crouching attitude, raucous voice, and difficulty of picking up food are the principal symptoms.

A. L. S.

[**Laparoscopy in the Dog.** Palla, O., *Wiener Tierärtz. Monatsschr.* Vol. 16, No. 22. 1929. (Taken from a Reprint.)]

The author devised the technique which he describes with a view to rendering exploratory laporatomy unnecessary. He points out that in many cases a definite diagnosis of diseases of the abdomen cannot be established unless exploratory laparotomy is performed. This operation is, however, not free from danger to the patient and is expensive.

After a brief review of the attempts that have been made to examine the interior of the abdominal and thoracic cavities by direct inspection, excluding the well-known cystoscopy, etc., the author goes on to deal with the disposition of the organs in the abdominal cavity, taking as his text the description given by Ellenberger and Baum in "Anatomie des Hundes."

On removing the abdominal wall of a dog the great omentum is exposed. This arises from the great curvature of the stomach and covers the abdominal wall ventrally and laterally as a kind of apron. The duodenum and the spleen are not, however, covered by this omentum. These organs are in direct contact with the wall of the cavity. The spleen lies in the left hypochondrium close to the stomach and its length is directed dorso-ventrally, the wider end being ventral in position. The stomach occupies a position in the epigastric region, and is for the most part to the left of the middle line. The pyloric portion is against the abdominal wall in the neighbourhood of the xiphoid. When filled, the stomach may extend backwards as far as the 12th or 13th ribs, the cardiac orifice is about opposite the 9th, and the duodenum begins about opposite the 9th intercostal space. Deep inspiration pushes the stomach a little backwards, while pregnancy forces it forwards to the extent of about two intercostal spaces.

The liver lies against the diaphragm and is for the greater part of its extent to the right of the middle line.

The bladder lies almost entirely in the abdominal cavity, only a small portion of it extending into the pelvis. It is, therefore, almost completely invested with peritoneum. When greatly distended it may almost reach the navel. Ventrally it rests on the abdominal wall. Dorsally it is in contact with the rectum, and laterally it is covered by loops of the small intestine. From the vertex of the bladder the ligament representing the obliterated umbilical artery connects the bladder with the hypogastric region.

On reflecting the great omentum the small intestine

comes into view. This in turn covers the colon and the kidneys. In the dog the colon is short; it begins in the right flank, and as the ascending colon it passes forwards on the inner side of the duodenum to the neighbourhood of the stomach. It then makes a turn to the left and is continued backwards as the descending colon, lying to the left of the termination of the duodenum and below and to the inner side of the left kidney. The kidneys, which are almost completely covered with peritoneum, extend forwards as far as the 12th or 13th ribs and backwards to the 2nd to 4th lumbar vertebræ.

The instruments required to perform laparoscopy are (1) air injection bellows, to produce a condition of pneumoperitoneum. The bellows used for inflation are the ordinary bellows used for udder inflation, with a metal chamber containing sterilised wool through which the air is blown. The tube ordinarily used for insertion into the teat for udder inflation is replaced by a fairly wide syringe needle; (2) a special trochar and canula and (3) the endoscope. The canula has a special valve at its outer end to prevent the escape of the insufflated air, and it is graduated in order that the depth of introduction can be determined. The trochar is 12 cm. long and the diameter of the canula is 5·5 m.m. The endoscope resembles a cystoscope in structure. At the end is a small electric lamp and just above this is a right-angled prism facing a small orifice in the tube. The image of the part illuminated by the lamp is reflected by the prism up through the tube to the eyepiece. The shaft of the endoscope is graduated so that it is known when it passes out beyond the end of the canula.

There is provision for rotation of the endoscope without moving the eyepiece; screws for the attachment of the battery for lighting the lamp are also provided. A small auxiliary canula is used to pass through the larger canula for the removal of the air from the abdomen when the observations are completed.

The endoscope and the canula with the valve cannot be sterilised by boiling water, but may be placed in 1 per cent. carbolic acid at body temperature for half-an-hour.

In carrying out examinations it is essential that the room be dark. The dog must be placed in a dorsal position on an operating table which can be moved or tilted to any desired position readily. The author makes a very strong point of acquiring practice and experience in interpreting pictures seen in the apparatus by utilising dead dogs. But he points out that it is more difficult to recognise certain tissues in the dead animal than in the living, because of tendencies to change colour. He refers particularly to the intestine, pancreas, bladder, and feet.

In the living animal the site of introduction of the endoscope depends upon the organ in which the existence of disease is suspected. By introducing it in the middle line at a point between the umbilicus and the xiphoid, the liver, stomach, small intestine, omentum, pancreas, kidneys and spleen can be examined. For examination of the pelvic portion of the cavity the instrument is introduced at a point three fingers' breadth from the line joining the umbilicus and brim of the pelvis and opposite the middle point of this line. It is essential to have the animal on a table which can be tilted in various directions so that the field of observation may be freed as far as possible of other organs.

It is advisable to shave the whole of the abdomen as a preliminary, because it may be necessary to alter the place of introduction of the endoscope. After thorough washing with soap and water disinfection with iodine is carried out. It is recommended that only a local anæsthetic be used at the seat of operation, general anæsthesia increasing the risks.

Air is introduced slowly into the abdomen with the insufflator, the syringe needle having been pushed into the abdomen though the flank. No local anæsthetic is necessary for this. A careful watch is kept on the respiration and the air slowly pumped in while there is no recognisable disturbance. Slight disturbance is of no importance. As the wound caused by the introduction of the needle is not airtight the air pressure within the abdomen must be kept up while observations are being made. The trochar and canula are inserted in the usual way and the trochar is replaced by the endoscope. After observations are completed the endoscope is replaced by the auxiliary canula and the air is allowed to escape. The large canula is then withdrawn and the wound closed with a suture including skin and muscle. If fluid is present in the abdominal cavity this must, of course, be removed first. This is done through the auxiliary canula.

According to Korbsch, who has written regarding endoscopy, the risks of the operation are (1) gas embolism, (2) hæmorrhage resulting from injury to large vessels, (3) injury to organs, (4) infection of the peritoneum, (5) the breaking down of existing adhesions with liberation of infective material, and (6) extensive emphysema of the skin. The present author states that he has not experienced any of these, and that he considers the operation free from danger.

A brief account of the individual organs is given. A general survey of the liver appears to be comparatively easy, but it is not possible to examine the gall bladder as normally it is not visible. Nor are the portal glands visible. The extent to which the stomach can be inspected depends considerably upon its fullness. The branching blood vessels on its surface are readily seen.

The omentum appears as a thin membrane which is traversed by inter-crossing white strands. The peristalsis of the small intestine can be observed through it. Sometimes it appears to be covered with bladder-like projections of various sizes. This is due to the presence of some of the insufflated air beneath it. The small intestine is readily inspected. It appears of a reddish yellow colour, its vessels are readily seen, and the peristaltic movements can be watched.

By placing the animal on its side the duodenum and pancreas can be inspected. In the latter one can make out the lobulation.

The colon cannot be examined, because in any position in which the dog may be placed it is concealed by the loops of the small bowel.

In order to inspect the whole of the spleen the animal must be placed on its side, as in the dorsal position only the ventral end of it can be seen.

The presence of fat usually makes inspection of the lower surface of the kidneys impossible, but in emaciated subjects they can be examined, the animal being placed on its side.

For the examination of the bladder, rectum, spermatic cords, or uterus the animal must be placed with the pelvis at a higher level than the rest, so that the view is not obstructed by the coils of the small intestine.

It is to be remembered that touching the parietal peritoneum with the endoscope should be avoided as this causes pain.

The paper is illustrated with ten drawings in colour showing the appearance presented by various organs.

A. L. S.

[**The Bacillus of Bovine Abortion as a Cause of Disease in Equines.** Vander Hoeden. *Tydschr. v. Diergeneesk.* Jan. 1, 1930. Vol. 57, No. 1. p. 15.]

By feeding a horse with culture of the bacillus of bovine abortion, the author found that the animal produced antibodies in its serum. Prior to the experimental infection the serum failed to agglutinate the bacterial suspension at 1 in 50. Three days after feeding there was no change, but on the 19th day the titre was 1 in 3,200. From this date onwards it gradually declined, and on the 127th day it was 1 in 100. There was a parallel result with the complement fixation test. A second animal, fed with the same culture after it had been sterilised by heat, showed no reactions to either test.

The author has tested sera from 424 horses, and of these 99 gave agglutinations at 1 in 50, 10 at 1 in 100, 18 at 1 in 200, and 3 at 1 in 400. The majority of these animals were horses for slaughter. Animals affected with fistulous lesions of the neck or withers gave positive reactions in 19 instances. In a few of these the agglutinative titre was very high (1 in 51,200) and in all except one it exceeded 1 in 100, the minimum otherwise being 1 in 400.

From 12 samples of pus from fistulous withers *B. abortus* was obtained either directly or after passage through the guinea-pig in eight instances.

These findings support those previously published by Rinjard and Helger, who isolated the organism from two out of three samples of pus from cases of fistulous withers.

A. L. S.

[**The Treatment of Acute Septic Metritis in the Bovine.** Hofstra. *Tijdsch v. Diergeneesk.* Jan. 1, 1930. Vol. 57. No. 1. p. 43.]

The author expresses the view that antipyrine is a specific remedy for septic metritis in bovines. As the drug is one that is readily absorbed it is not necessary to resort to subcutaneous or intravenous injection. The prescription which he gives is:—

Antipyr, 75 g.
Pulv. rhad. althæ 165 g.

For twelve powders.

The powders are given in warm water every six hours.

In less severe cases three powders may be given in the course of 24 hours instead of four. Animals thus receive (in severe cases) 25 grammes of the drug in the course of 24 hours.

He states that no other treatment of any kind is necessary.

This paper is in the nature of a preliminary note and the author hopes to publish details of cases later.

A. L. S.

Report.

The Imperial Institute of Veterinary Research, Muktesar.

The Report of the Imperial Institute of Veterinary Research, Muktesar, for the year ending March 31st, 1929, is now published, and is obtainable from the Government of India Central Publication Branch, 3, Government Place West, Calcutta, at the price of Rs. 1-4-0, or from the Office of the High Commissioner for India, 42, Grosvenor Gardens, London, S.W.1, at the price of 2s.

The Report deals with (I) the Staff and tours undertaken by officers; (II) Internal Economy of the Institute; (III) Manufacture and issue of Sera and Vaccines; (IV) Instruction; (V) Research and Appendices showing the results of inoculation in the field of the various products issued, the total quantities of products prepared and issued, and the financial aspect of the working of the Insitute during the year.

(I) Staff.—The sanctioned appointments of the Institute consisted of a Director, who resigned and handed over charge as from March 31st, 1929; a Pathologist; First, Second, and Third Veterinary Research Officers, of which the first was vacant during the year, and the second filled by a Temporary Veterinary Research Officer; three Laboratory Assistants; two Assistant Veterinary Research Officers; a Protozoologist, a Helminthologist and a Biochemist, the latter appointment being unfilled during the year; a Veterinary Deputy Superintendent; an Engineer; a Farm Manager; a Medical Officer; and three Veterinary Inspectors.

(II) Internal Economy.—For technical work at Muktesar, 1,344 hill bulls, 169 sheep, 1,006 goats, 205 rabbits, 234 guinea-pigs and 167 fowls were purchased. At the Branch Institute at Izatnagar, 1,847 buffaloes were purchased for the production of rinderpest and hæmorrhagic septicæmia anti-sera. Two hundred of these were subsequently employed for the manufacture of crude black-quarter aggressin, and 392 small buffaloes were transferred from the Government Lymph Depôt, Patwa Dangar, for the same purpose. Sixty-four goats were used for the production of goat virus (rinderpest). The mortality among buffaloes in the course of anti-rinderpest serum production was 12 per cent., and in subsequent anti-hæmorrhagic septicæmia production 3·5 per cent. The average daily number of cattle attendants employed under the Veterinary Deputy Superintendent was 205, and 114 coolies under the Farm Manager; the average number of men employed at Izatnagar was 272. Rs. 35,838 were spent on laboratory appliances and technical equipment, more than half of which was incurred for bottles and other material for the despatch of sera and vaccines. The total expenditure of the Institute within the budget grant for the year was Rs. 7,14,727 and the income was Rs. 14,68,421, representing, therefore, a gross profit of Rs. 7,53,694 on the year's working.

(III) Manufacture and Issue of Sera and Vaccines :—

(1) *Rinderpest Serum.*—4,932,954 (5 c.c.) doses were issued, of which 810,655 doses were for serum-simultaneous inoculations, which method of inoculation is largely on the increase, indicating a greater appreciation of its merits.

(2) *Hæmorrhagic Septicæmia Serum.*—Issued 480,648 (15 c.c.) doses.

(3) *Hæmorrhagic Septicæmia Vaccine.*—490,780 (5 c.c.) doses issued.

Both issues are an increase on the previous year.

(4) *Anthrax Serum.*—40,033 doses (15 c.c.) issued.

(5) *Blackquarter Serum and* (6) *Blackquarter Aggressin.*—83,953 (15 c.c.) doses of the former, and 222,419 (5 c.c.) of the latter were issued. The large increase of the issue of " aggressin " is a cause for considerable satisfaction as indicating its efficacy.

(7) *Mallein.*—18,089 (1 c.c.) doses for the ordinary subcutaneous test, and 16,220 (0·1 c.c.) doses for the I.D.P. test were issued, both being considerable reductions on the issues of the previous year.

(8) *Tuberculin.*—338 (3 c.c.) doses ordinary (human) for the subcutaneous test, 985 doses (0·25 c.c.) concentrated (human) for the intrapalpebral and double-intradermal tests for tuberculosis, and 403 (8 c.c.) doses of avian tuberculin for Johne's disease were issued.

(9) *Strangles Serum and Vaccine.*—1,239 (15 c.c.) doses of the former and 1,133 doses of the latter were issued, but as the result of extensive research work has shown them to be of no value in the protection of equines against strangles, it is proposed in future to discontinue the manufacture of Anti-steptococcic Serum entirely; there is still a small demand, however, for Anti-streptococcic Vaccine.

(10) *Contagious Abortion (Equine) Vaccine and* (11) *Contagious Abortion (Bovine)* Vaccine.—120 doses of the former and 164 doses of the latter were prepared and issued, being lesser quantities than the previous years.

(12) *Antogenous and " Mixed " Vaccines.*—50 and 220 doses respectively were prepared and issued.

(13) *Rinderpest Virus.*—15,295 doses of virulent rinderpest blood for active immunisation of cattle were issued during the year, two-thirds of which were sent to the Branch Institute. It has now been supplanted by goat virus.

(14) *Fowl Cholera Serum.*—A small quantity was issued, and production will be continued only if there is sufficient demand.

The total issues of sera and vaccines during the year amounted to 6,306,405 doses and the resultant income was Rs. 13,75,834, nearly two lakhs of rupees more than the previous year.

(IV) Instruction.—Four officers of the R.A.V.C. and six Veterinary Inspectors of Provincial Governments attended courses of instruction during the year.

(V) Research :—

(*a*) *Rinderpest.*—Work was mainly directed towards the isolation and cultivation of the causal organism, and to the use of " Goat-Virus " for the serum-simultaneous inoculation against the disease.

(*b*) *Surra.*—The application of the curative treatment of equine surra by intrathecal intravenous injections of " Bayer 205," as devised by Dr. J. T. Edwards, shows a marked success. As a field test 57 naturally-infected horses of the Mona Remount Depôt were submitted to treatment. Six died as the result of accident in application or from other causes than surra. Of the remainder, 48, or 94·11 per cent. were cured, three had recurrence but were subsequently cured. Eighteen couple of hounds from the Delhi Hunt, ten hounds of which had been affected with surra and treated by " Bayer 205," were kept at Muktesar from March to October and remained free from the disease.

(*c*) *Piroplasmosis.*—Investigation was made into acute Theileriasis affecting 19 Holstein stud bulls imported by the Military Department into India from South Africa and a summarised record of the disease and its symptoms was made. Medicinal treatment appeared to have no beneficial effect and careful nursing is stated to be the only treatment available at the present time. A point of some importance is that the bulls had been subjected to blood inoculation in South Africa before export with the object of immunising them against the African " piroplasms," *Babesia bigemina* and *Theileria mutans.* In the present instance the records show no evidence of disturbance attributable to *B. bigemina,* which rather points to the conclusion that this parasite is identical in the two countries, while the Theileria parasites of India differ markedly in their pathogenicity from those of South Africa.

(*d*) *Foot-and-Mouth Disease.*—Experimental work was confined to transmission and maintenance of the virus in guinea-pigs and effects of the disease in them.

(*e*) *Johne's Disease.*—A large-scale experiment was planned to ascertain the vaccinating relationship between the bacilli of the disease and the avian type of tubercle bacilli.

(*f*) *" Ranikhet " Fowl Disease.*—Studies carried out appear to indicate that this disease, which is widely spread throughout India, resulting in enormous losses amongst poultry, is probably identical with the disease termed " Newcastle disease " by Doyle. Serum from a few fowls which had recovered from the disease, experimentally produced, gave promising results as a preventive.

(*g*)*Tetanus.*—The production of anti-tetanic serum is in progress.

(*h*) *Kumri.*—On the analogy of treatment of cases of general paralysis of the insane by artificial infection with malaria, treatment of kumri cases by infection with surra trypanosomes and subsequent intrathecal-intravenous injections of " Bayer 205 " is being tried.

(*i*) *Glanders.*—A completely avirulent culture of the glanders bacillus has been obtained by repeated sub-inoculation upon agar slopes extending to over one thousand passages, and results appear to indicate that Mallein produced from such culture is only slightly inferior to the stock product.

(*j*) *Equine Contagious Abortion.*—Vaccination consisting of repeated injection of killed cultures of a number of strains of *B. abortivo-equinus* applied in a Military Stud have not been encouraging, but work is continuing.

(*k*) *Pneumonia in Animals.*—This condition has been observed in association with rinderpest both in cattle and in goats (those used for the fixation of goat rinderpest virus and in healthy goats). Bacteriological examination revealed the presence of a pasteurella organism.

(*l*) *Other Diseases.*—Research work related also to blackquarter, bovine coccidiosis, bovine nasal granuloma, malaria in buffaloes and fowl pox.

Post-mortems to the number of 2,070, and blood smears examined numbering 3,260, were carried out at the Institute during the year.

J. M.

Divisional Reports.

Midland Counties Division, N.V.M.A.*

Annual Meeting and Dinner at Birmingham.

The annual meeting of this Division was held at the Grand Hotel, Birmingham, on Thursday, February 13th, 1930, Mr. W. E. Ison presiding.

Resignation.—A letter was read from Mr. R. Watts, of Nuneaton, resigning his membership of the Division, on the ground that he has left the district. Mr. Watts' resignation was accepted with regret.

Royal Sanitary Institute Congress.—The in-coming president was appointed as the Division's delegate to the Congress of the Royal Sanitary Institute, to be held at Margate from June 21st to 28th.

Council's Report.—The Hon. Secretary (Mr. H. J. Dawes) read the report of the Council, which met earlier in the day, making recommendations for the appointment of officers for the ensuing year. These recommendations were all acted upon.

Election of Officers.

President.—The retiring President moved that his successor in the chair be Mr. H. Tudor Hughes. There was not a keener or more active member of the Division, he said, than Mr. Hughes, who was always ready to enter into their discussions, and who attended the quarterly meetings with great regularity. He was sure Mr. Hughes would worthily uphold the traditions of the office, and no one was more entitled to the honour.

The Hon. Secretary said he would like the privilege of seconding the nomination, because he knew all that Mr. Hughes had done for the Division in the past. He had had a great deal to do with him, professionally and otherwise, and was satisfied he would make a first-class president.

The resolution having been carried unanimously, Mr. Hughes acknowledged the compliment. It was an honour, he said, to which he had not looked forward quite so soon, and to receive it thus early gave it a double value.

Vice-Presidents.—Mr. J. W. Conchie and Major Frank Chambers were elected senior and junior Vice-presidents respectively, the retiring president, Mr. Ison, being also made a Vice-president.

Hon. Treasurer.—Mr. W. H. Brooke was re-elected Hon. Treasurer.

Hon. Secretary.—Mr. H. J. Dawes was re-elected Hon. Secretary. Warm tribute was paid to the efficient manner in which Mr. Brooke and Mr. Dawes had carried out their duties in the past. Mr. Hughes remarked that he should have hesitated about accepting the presidency if he had thought any change would be made in the executive officers.

Auditors.—Messrs. F. L. Gooch, W. F. Aston and S. M. Woodward (re-elected).

Council.—Messrs. A. Mackenzie, H. W. Steele-Bodger, W. J. B. De Vine, H. W. Dawes, G. F. Banham, H. B. Hiles and J. R. Barker, together with the officers of the Division. The only change was the election of Mr. Barker in place of Mr. Ison, who is a member *ex-officio*, as Vice-president.

As before, the *Veterinary Inspectors' Committee* will consist of all members who are veterinary inspectors.

Treasurer's Report.—Mr. W. H. Brooke presented the statement for the past year. This showed a balance in hand of £90 17s. 7d., compared with £101 3s. 10d. a year ago. Members' subscriptions amounted to £64 13s., but there were a great many in arrears, including 49 for last year.

The accounts, having been duly audited, were passed, and the Treasurer was authorised to renew the subscription to the Victoria Benevolent Fund (£5 5s.) and the subscription to the National Horse Association (£1 1s.), as last year.

The Macqueen Testimonial.—The Hon. Secretary raised the question of a contribution to the Macqueen Testimonial Fund, mentioning that Professor Macqueen was not only one of their honorary members, but also had given them addresses on many occasions.

Mr. Tudor Hughes said the Division would be greatly lacking if its name did not appear on the subscription list, especially as they had so much money in hand. He moved that a subscription of five guineas be paid.

This was seconded by Mr. S. M. Woodward, and carried unanimously.

Votes of Thanks.—Mr. W. F. Aston moved a vote of thanks to the officers of the Division for their services during the past twelve months. He congratulated Mr. Ison on the completion of a very successful year of office, but said they were most of all indebted to Mr. H. J. Dawes, their Secretary, who for many years had been the mainspring of the Division.

Mr. J. Martin, in seconding, commented on the very businesslike manner in which the affairs of the Division were conducted.

The motion was heartily carried, and the President, in reply, said his own task had been rendered both easy and pleasant by the ready way in which all the members had rallied round him. His thanks were specially due to Mr. Dawes, without whose experience and enthusiasm the Division would be badly off.

The Annual Dinner.

In the evening, the annual dinner was held, the occasion being graced by the presence of ladies. Mr. Ison, who presided, was accompanied by his sister, Miss Ison, and they first received the guests in formal manner.

There were also present a number of distinguished visitors, the company including: Dr. and Mrs. Penhale (West Bromwich), Professor Billington (Birmingham), Professor Beckwith Whitehouse (Birmingham), Mr. G. P. Male (President of the National Veterinary Medical Association), Mr. and Mrs. W. T. Olver (Mayor and Mayoress of Tamworth), Mr. and Mrs. H. J. Dawes, Mr. H. W. Dawes and Miss Dawes (West Bromwich), Mr. and Mrs. J. W. Conchie (Kidderminster), Mr. and Mrs. W. F. Aston (Shrewsbury), Mr. and Mrs. R. B. Palmer (Warwick), Mr. and Mrs. W. G. Payton (Warwick), Mr. C. O. Langley (Wolverhampton), Mr. and Mrs. G. Smith (Great Barr), Major and Mrs. Frank Chambers (Wolverhampton), Mr. S. M. Woodward and the Misses Woodward (Birmingham), Mr. and Mrs. Brennan De Vine and Miss De Vine

*Received on 27th February.

(Birmingham), Mr. and Mrs. H. Tudor Hughes (Oswestry), Mr. and Mrs. W. H. Brooke (Handsworth), Mr. and Mrs. C. G. Allen (Birmingham), Mr. Burrow (Birmingham), Miss Ducksbury (Birmingham), Mr. and Mrs. J. Cormack (Coventry), Mr. and Mrs. H. W. Griffiths (Moseley), M. J. D. McCraig (Coventry), Mr. and Mrs. J. R. Barker (Hereford), Mr. and Mrs. G. H. Leader (Bridgnorth), Mr. A. A. Forsyth and Miss Forsyth (Cannock), Mr. L. W. Heelis (Solihull), Mr. J. M. Hughes (Birmingham), Mr. E. O'Neill (Birmingham), Mr. and Mrs. H. W. Steele-Bodger (Tamworth), Mr. J. Martin (Wellington) and Mr. and Mrs. J. Robertson (Stourbridge) and Major P. Abson (Nottingham).

Apologies for absence were received from Sir Gilbert Barling, Professor Gamgee, Professor Macqueen, Professor Hobday, Sir John McFadyean, Professor Brayley Reynolds, Messrs. M. Tailby, E. Ringer, J. A. R. Jones, Dr. Newsholme, Messrs. H. S. Caldwell, W. Trigger, L. C. Tipper, Dr. F. Bullock, Mr. F. L. Gooch, Councillor and Mrs. Kemp, Mr. E. R. Miles, Dr. Graves, Captain W. K. Townson, Messrs. R. Hughes, T. Baxter, H. S. Cockburn, J. A. Connell, O. V. Gunning, T. J. Brain, R. L. Green, T. H. Hobson, T. D. M. Martin, H. S. Hiles, E. Franklin, R. R. H. Over, W. Grasby, H. S. Reynolds and others.

The toast of "The King" having been duly honoured, Professor Billington proposed "The Royal College of Veterinary Surgeons," remarking that there were many points of contrast between his own profession and that of the veterinary surgeon. Problems common to both of them called for the closest co-operation, and one of them unquestionably was that of bovine tuberculosis. The medical profession was largely dependent upon veterinary science in the battle with that dread disease. An important source of contamination was tuberculous milk and, in a less degree, tuberculous flesh. In Birmingham, and he had no doubt in other towns also, this question had been energetically tackled, and there was to be noted a real and substantial fall in the number of victims. That was something to the credit of the veterinary surgeon. The Royal College had a long and honourable history, and had obtained from Parliament many valuable privileges, amongst which, he noticed, was the right to tax its members to the extent of a guinea a year. In return, the veterinary surgeon enjoyed a professional dignity and a social status which it might not otherwise have. The public, too, was showing appreciation of the work which veterinary surgeons were doing in the crusade against epidemics such as distemper, tuberculosis, foot-and-mouth disease and swine fever. In humorous vein, Professor Billington referred to the profound respect that used to be shown towards the old cow doctor, as he was called, and then jokingly envied the veterinary surgeon the right to decide whether a patient was worth curing or not. He, as a doctor, was denied that privilege, and he sometimes wished he could take the same line in regard to some hopeless and pretty troublesome patients and still be sure that he would get his fee. He coupled with the toast the name of Mr. H. Tudor Hughes.

Mr. Hughes, replying, said the duty of doing so had been cast upon him through the absence, which they all greatly regretted, of Professor Craig. It was the first time for a number of years that they had not been able to welcome the President of the Royal College of Veterinary Surgeons at their annual dinner. Professor Craig hoped to have been present, but illness among his staff had prevented him leaving Dublin. Unfortunately, Professor Craig had omitted to send his speech along, and he (Mr. Hughes) could not, at such short notice, do the occasion justice. Referring to the subject of bovine tuberculosis, he said it was still engaging the attention of the veterinary profession, and a scheme for its eradication was at present being formulated on national lines. The fee of a guinea to which the proposer of the toast had referred was a reminder of the duty they owed to their profession, and it enabled the Royal College to carry on its work.

Mr. C. O. Langley proposed "The National Veterinary Medical Association," and said he had been connected with it so long as its legal adviser that he had begun to regard himself as a member of it. The veterinary profession, being numerically small, could not afford to suffer from undue modesty or to hide its light under a bushel. It must advertise itself, not individually, of course, but collectively, and let the public know how it was benefiting the community. The National Veterinary Medical Association existed to promote the interests of its members, and he could assure them that the Council worked very hard to that end. To serve on the Council was anything but a sinecure, and the various meetings occupied a good deal of time and serious thought. He appealed to veterinary surgeons everywhere to support the National Association, which was at once the watchdog and the mouthpiece of the profession.

Mr. G. P. Male (President, N.V.M.A.) responded, and said one of the pleasantest duties connected with his office as president was to meet the members of the profession, as he was doing that night. The "National" had had a great many things to consider during the past few months, one of which was to help the promoters of a certain Parliamentary Bill by putting forward some useful suggestions. Negotiations were going on with the R.S.P.C.A. to further a scheme for the treatment of animals belonging to the poor, either free or at a very small charge. In these negotiations the "National" was insisting that none but the genuine poor be allowed to benefit, or it would be another case of the medical profession and the hospitals, in which voluntary service was grossly abused. The question of free clinics was a very serious one, and he knew of towns where veterinary surgeons had been obliged to close their doors in consequence. He was trying to prevent anything of that sort happening again. Other matters of interest to the profession kept arising which called for the attention of the National Association, and he relied upon the loyalty of their members in accepting decisions arrived at. He referred to the work that was being done by the various committees of the Council, and especially the Editorial Committee, which was concerned with the preparation of the *Veterinary Record*. Happily, the Association was blessed with very good officers, and it was not necessary for him, at Birmingham, to sing the praises of Mr. H. J. Dawes. Mr. Dawes devoted endless time and trouble to the affairs of the "National," and he (Mr. Male) had to thank him for many kindnesses, whilst the whole profession was very much his debtor.

Mr. J. D. McCraig proposed "The Midland Counties Veterinary Medical Association," and said that in its

60 or 70 years' existence it more than accomplished the purposes for which it was formed. These included promoting the social status of the profession, safeguarding their professional interests, creating a better understanding among veterinary surgeons, and furthering the cause of veterinary science. The Association's record of achievement showed how carefully those objects had been kept in view.

The President, in reply, said he was relinquishing the chair with a good deal of regret, because that gathering marked the end of a very happy year of office. He had always taken the liveliest interest in the Association, partly because his father was one of its founders. For many years the Association enjoyed an independent existence. To-day it was a branch of the "National," and he was pleased to think that under the new régime its usefulness had been extended. He was sorry so many members of the profession did not belong to the Association, and he could assure them the loss was theirs in many ways. The friendly intercourse which the quarterly meetings promoted was worth while, and he never attended one at which he did not hear something worth knowing. He took that opportunity of thanking the members for the manner in which they had supported him during the past year, and especially Mr. Dawes, their esteemed Secretary, who attended to every detail with a thoroughness of which few men were capable.

The other toasts on the programme were "The Visitors," proposed by Major Frank Chambers and responded to by Professor Beckwith Whitehouse, and "The Ladies," submitted in felicitous terms by Mr. Howard Dawes, and gracefully acknowledged by Miss Ison.

A splendid musical programme added to the evening's enjoyment; the artists being Miss Pauline Day, Mr. James Howell, and Mr. Percy Edgar, with Mr. Walter Randall at the piano. H. J. Dawes, *Hon. Secretary.*

Captain J. Gregg's Work for Agriculture in Ulster.

An interesting feature of the annual meeting of the Central Milk Recording Society of Northern Ireland was the presentation of an address and gifts to Captain J. Gregg, O.B.E., J.P., M.R.C.V.S., "in appreciation of his untiring efforts to promote the welfare of the farming community."

The gifts took the form of a mahogany roll-top desk, a chair, and a cheque, while Mrs. Gregg was the recipient of a silver salver and a coffee service.

In the course of his speech of acknowledgement, Captain Gregg said that his work of educating and encouraging farmers to breed for milk was started over 20 years ago. They would understand, therefore, how grateful that vote of confidence was to his pride. Their approval that day showed him that he had not altogether failed. Many dreamers died before their dreams were realised, but he had been more lucky than most in that respect.

Review.

[Manual of Horsemastership, Equitation and Driving, 1929.

London: His Majesty's Stationery Office, 9d. net.]

This is an excellent little book, full of very useful information on horse-management, watering, feeding, bedding, grooming, riding, driving, saddlery and harness. Though primarily intended for the horsed units of British Cavalry, Artillery, Engineers and Signals, its contents should prove very helpful to veterinary students preparing for examination in stable management. As a guide to horse owners and horse-keepers it can be strongly recommended.

North Midland Division, N.V.M.A.*

Social Evening at Sheffield.

The Quarterly Meeting of the above Division took the form of a social evening held at the Broombank Hotel, Glossop Road, Sheffield, where a dinner, followed by dancing and cards, had been arranged.

The following members and friends were present: Major and Mrs. Abson, Capt. Angler, Mr. and Mrs. Bagshaw, Mr. and Mrs. Bowett, Mr. Bowett, junr., Mr. Canning, Mr. and Mrs. Coward and friend, Mr. and Mrs. Collinson, Mr. and Miss Elliott, Dr. and Mrs. Edington, Miss Fairhurst, Mr. Fletcher, Mr. and Miss Furness, Mr. Grayson, Miss Gronby, Mr. Holliday, Mr. and Mrs. Hopkinson, Mr. and Mrs. Hudson, Miss Lloyd, Mr. and Mrs. Livesey, Dr. McColm, Mr. and Mrs. Marrison, Mr. Ponsford, r. and Mrs. Sampson, Misses M. and S. Sampson, and Mrs. Mellor, Mr. and Mrs. Nixon, Mr. Pepper, Miss Mr. Scott, Mr. and Mrs. C. S. Smith, Misses Smith, Mr. and Mrs. Thompson, Mr. Thompson, junr., Mr. Tullis and Miss Dobie, Mr. Tweed and Miss Gittus, Mr. Walker and Miss Airey, Mr. and Mrs. Woodhead, and Mr. and Miss Woodrow.

A very enjoyable evening was spent and it was the expressed feeling of everyone of the members present that no form of social function could fulfil better the objects of the Division in promoting and maintaining a friendly understanding amongst its members. This is the first occasion on which a social evening has been arranged, and its success was added to by the large attendance of members.

The President, Mr. J. S. Lloyd, kindly gave the prizes for card playing and the Vice-Presidents, Capt. Angler and Mr. F. C. Scott, for dancing, these gifts being very much appreciated.

The evening concluded with the expression of a general wish that a similar event should take place at least yearly.

Wm. Tweed, *Hon. Secretary.*

"Testing London."

With a view to testing the suitability of certain classes of South African-bred lambs for the overseas mutton trade, the Division of Veterinary Services and Animal Industry, South Africa, is consigning several classes of mutton carcasses to London, for disposal and report. The Grootfontein School of Agriculture was asked to contribute 35 Blackhead Persian hamel lambs, and these were forwarded to Durban on January 20th. They were entirely veld-reared, and were in good condition when despatched. Born in April-May, 1929, they averaged 71 lb., live weight, with a range of 76 lb. to 63 lb. It is considered that lambs of this weight should find favour with the consuming public here.

The Deputy Minister of Agriculture, Canada, has announced that the prohibition of the import into Canada of British cattle, which had been imposed on account of foot-and-mouth disease, has been cancelled as from March 8th. Professor Carlyle, manager of the Prince of Wales's ranch, sailed recently for great Britain, and it is stated that the termination of the embargo will result in his taking back a shipment of pure-bred stock for the ranch.

* Received on February 27th.

From The Veterinarian,
January, 1830.

On Breeding.

By Mr. Karkeek.

(*Continued from page* 248.)

Spain.

The Spanish horse is everything, in figure, strength, speed, and constitution, that a horse ought not to be; he is, in fact, a miserable specimen of his species; and the disproportion observable in the different parts of which he is composed, produces most discordant and unnatural motions, wanting what *Bourgelat* considers as necessary to constitute perfection: "cette regularité de proportions qui constitue les belles formes et, de plus, est essential à la justesse des aplombs." The Spaniards have taken great pains in breeding mules, which they produce in great numbers; and in order to procure a considerable number of these useful animals they have sacrificed their handsomest mares, whereby they have almost totally annihilated the race of good horses in a country which, so late as the reign of Philip IV, could furnish eighty thousand for military service.

The *Flemish* and *Dutch* horses are all large and bulky animals, possessing large heads and broad flat feet, and are only calculated for purposes of heavy draught. We are chiefly indebted to them for our present breed of draught horses.

United States of North America.

In a country extending through fifteen degrees of latitude, where there are so many variations of soil, we must expect considerable diversities of agricultural productions, and, consequently, different kinds of horses. Much attention of late has been bestowed, and great exertions made, to improve the breed of domestic animals, particularly horses; and success has crowned their endeavours in bringing to perfection such a number of those useful animals, that in New York alone, according to "Warden's Statistical Survey in the year 1815," their number was estimated at 300,000; yet, at the time of its first discovery by Europeans, those animals were not seen in any part of the American continent.

The prices in 1815, as stated by Warden, were "fine race horse, from two to three thousand dollars; saddle horses, from one hundred and fifty to two hundred dollars; a pair of carriage horses, from four to six hundred dollars."

The *South Americans* are indebted to the Spaniards for their breed of horses; for, before that extensive tract of country was discovered by Columbus, they were unacquainted with the animal. Since that period the breed has multiplied so prodigiously in that thinly inhabited country, and has so far relapsed into a state of nature, as to exhibit the general characters of the wild animal.

The *Danish* and *Italian* horses are not very handsome, but are well calculated for carriages. Most of them have large thick necks; but this is in some measure compensated by their stateliness in form, and they are not altogether ungraceful in their movements.

The studs of the *German* nobility have been considerably improved since the termination of the late war. They have been at great expense in procuring the best thoroughbred mares and stallions; and already the studs of several noblemen, particularly those residing near Mecklenbourg, bid fair to rival the best in England.

The *Russian* horses are strong, hardy, and muscular animals; they are rather coarse in their heads, but are capable of enduring great fatigue and privations, though, in point of speed or durability, they cannot approach in competition with the English horse. This was clearly shown in 1815, when a couple of race horses, that were thought nothing of in this country, beat the best horses of the Cossack breed.

The *Turkish* horses are strong, hardy, and useful animals; but owing to the indolence of the Turks, they are not in such a high state of perfection as we might expect, in such a delightful and salubrious country. There is much, however, to be attributed to the discouragement arising from the tyranny of their government* "the owner often wilfully laming a valuable horse, lest their beys should like it, and force it from them." Their cavalry are considered superior to the Russian, and at this time are equal almost to any in Europe.

The Turkish breed have contributed considerably to improve the English race-horse. The *D'Arch yellow and white Turks*, the *Stradling* or *Lister Turk*, *Williams* or *Turnur's Turk*, and the *Byerley Turk*, with many others of equal notoriety, have not a little added to our breed, as their "*get*" bespeaks.

Barbary possesses two breeds of horses: one kind is chiefly found in mountainous districts; the other is principally bred in the kingdom of Morocco. The former are animals of little worth, whilst the latter are highly esteemed, and considered of great value. Their paces are good, and accompanied with dignity; they are swift, active, and light, and are celebrated for their beauty, particularly about the head, which is most elegantly formed.

The Barbs have chiefly contributed to the excellence of the English race-horse. The most remarkable ones are *Lord Fairfax's Morocco Barb*, and the *Godolphin Arabian*, as he was usually called, though he was evidently stolen from the coast of Barbary, and smuggled into France. This famous stallion contributed more to the improvement of our native breed than any other horse before or since his day.

The *Arabian* horses are very beautiful animals: they are strong, vigorous, and muscular, and are capable of enduring great fatigue. The Arabians have produced them in the highest perfection from the wild unmixed breed that were formerly found in Arabia Deserta. They are considered as the only breed that have retained their primæval form, which is accounted for by the extreme care that is taken in breeding them, as the Arabs allow none but stallions that are conspicuous for their size, colour, and proportion to have access to their mares, which is done in the presence of a notary, or public officer, belonging to the district, who records the name of horse and mare, and the whole pedigree of each.

The principal riches and amusements of the Arabs are dependent on their horses: they, consequently, take all imaginable care of them. An Arab is as fond of his horse as of his children. "Men, women, children, mares, and foals all lie in one common tent, and they lodge promiscuously, without fear of injury.†

"This constant intercourse produces a familiarity, and creates a tractability in the horses, that could arise only from a regular good usage, little acts of kindness, and a soothing language, which they are accustomed to from their masters. They are quite unacquainted with the spur; the least touch with the stirrup sets these 'airy coursers' in motion; they set off with a fleetness that surpasses that of the ostrich, yet they are so well trained as to stop in their most rapid speed, by the slightest check of the rider. There are some instances related of their being mounted without either bridle or saddle, when they show such compliance to their rider's will, as to be directed in their course by the mere motion of a switch.‡"

"Paret in obsequium lentæ moderamine virgæ,
Verbera sunt præcepta fugæ, sunt verbera frœna."§

(*To be continued.*)

• Univ. Modern Hist. quoted from Maillet and Pocock.

† Pennant's Zoology.

‡ Pennant's Zoology, quoted from Taverner's Travels, vol. i. 63.

§ Nemesion Cyneg. 267.

Eleventh International Veterinary Congress, London, August 4th-9th, 1930.

Programme of General and Sectional Meetings.

General Meetings.

1. Foot-and-Mouth Disease (Plurality of Viruses, Immunisation, Disinfection).

Reporters :—

Lignieres, Professor J., Ex-Directeur, Fondateur de l'Institut National de Bactériologie du Ministère de l'Agriculture, Professeur à l'Université, Membre de l'Académie de Médecine et Président de l'Académie d'Agronomie et Vétérinaire de Buenos Aires.

Andrews, W. Horner, D.Sc., M.R.C.V.S., Director, Veterinary Laboratory, Ministry of Agriculture, Weybridge, England.

Vallée, Professor H., Laboratoire National de Recherches Alfort (Seine), France.

Waldmann, Professor Dr. O., Direktor der Staatlichen Forschungsanstalten, Insel Riems bei Greifswald, Germany.

2. Tuberculosis (Vaccination).

Reporters :—

Guerin, W. V., Chef de Service à l'Institut Pasteur, Paris.

Watson, E. A., V.S., Chief Pathologist, Animal Diseases Research Institute, Department of Agriculture, Hull, Que., Canada.

Ascoli, Professor Alberto, Istituto Vaccinogeno Antitubercolare, Milan.

3. Infectious Abortion of Cattle, Sheep and Swine.

Reporters :—

Zwick, Professor Dr., Direktor des Veterinärhygienischen und Tierseuchen-Instituts der Landes-Universität Giessen, Giessen, Germany.

Holth, Professor Dr. Halfdan, Veterinaer-Institutet, Oslo.

Cotton, Dr. W. E., Superintendent of Experiment Station, U.S. Department of Agriculture, Bureau of Animal Industry, Washington, D.C.

*Seddon, Dr. H. R., D.V.Sc., Veterinary Research Station, Glenfield, N.S.W., Australia.

4. The Relationship of the Veterinary Surgeon to Animal Husbandry.

Reporters :—

Hruza, Professor G. M. V. A., Tierärztliche Hochschule, Brünn, Czechoslovakia.

Markowski, Professor Dr. S., Rektor der Tierärztlichen Hochschule, Lwôw-Lemberg, Poland.

Share-Jones, Professor John, D.V.Sc., M.Sc., F.R.C.V.S., Director of Veterinary Studies, University of Liverpool.

5. Veterinary Science in Relation to Public Health, with Special Reference to Production and Distribution of (*a*) Meat and (*b*) Milk.

Reporters :—

Ostertag, Professor Dr. R. v., Ministerialrat im Württbg. Innenministerium, Am Reichelenberg 3, Stuttgart, Germany.

Oijen, Professor C. F. van, Faculteit der Veeartsenijkunde, Rijks Universiteit te Utrecht, Utrecht.

Wall, Professor Dr. Sven, Föreständaren, Statens Veterinärbakteriologiska Anstalt, Experimentalfältet, Sweden.

Gofton, A., F.R.C.V.S., Chief Veterinary Inspector, Public Health Chambers, Edinburgh.

Berger, Dr. H. C. L. E., Director of the State Veterinary Services, Chief Veterinary Officer of Health, The Hague.

* Has not yet accepted.

6. The Law Governing the Practice of Veterinary Medicine and Surgery.

Reporters :—

Leclainche, Professor E., Inspecteur général, Chef des Services Vétérinaires au Ministère de l'Agriculture, Paris.

Buergi, Professor Dr. M., Direktor des Veterinärmtes, Eidgenössisches Volkswirtschaftsdepartement, Bern.

Egana, Señor Don C. Sanz, Director del Matadoro y Mercado de Ganados, Madrid.

Sectional Meetings.

Section I.—Pathology, Bacteriology and Epizootiology.

(*a*) *Variola in Domestic Animals.*

Reporters :—

Bridre, Dr. J., Chef de Service à l'Institut Pasteur, Paris.

Frenkel, Dr. H. S., Director of the Veterinary Division of the State Laboratory of Public Health, Utrecht.

Glover, Ronald E., B.Sc., M.R.C.V.S., Institute of Animal Pathology, Cambridge.

(*b*) *Anthrax (Control of Dissemination by Animal Products).*

Reporters :—

Muessemeier, Dr. med. vet. h. c., Ministerialdirigent im Landwirtschaftsministerium, Berlin.

Fischoeder, Dr. F., Dyrektor Dep. Weter., Ministerium für Ackerbau, Warszawa.

Riegler, Prof. P., Directeur de l'Institut Pasteur et Doyen de la Faculté de Médecine Vétérinaire, Bucharest.

(*c*) *Swine Fever (Diagnosis and Vaccination).*

Reporters :—

Nusshag, Direktor Dr. Wilhelm, Wissenschaftl. Leiter des Perleberger Impfstoffwerks, Berlin-Frohnau.

Geiger, Dr. W., Eystrup, Germany.

Dorset, Dr. M., Bureau of Animal Industry, U.S. Department of Agriculture, Washington, D.C.

(*d*) *Rabies (Vaccination).*

Reporters :—

Finzi, Guido, Direttore, R. Instituto Superiore di Medicina Veterinaria, Milan.

Aujeszky, Professor Dr. A., Klg. Ung. Tierärztliche Hochschule, Budapest.

(*e*) *Distemper (Ætiology and Vaccination).*

Reporters :—

Dunkin, G. W., M.R.C.V.S., D.V.H., Superintendent, Medical Research Council, Field Research Laboratories, Mill Hill, London.

Hinz, Professor Dr., Direktor der Klinik für kleine Haustiere der Tierärztlichen Hochschule, Berlin.

Carre, Professor Dr. H., Laboratoire National de Recherches, Alfort (Seine), France.

(*f*) *Blackleg (Vaccination).*

Reporters :—

Bosworth, T. J., B.Sc., M.R.C.V.S., D.V.S.M., Institute of Animal Pathology, Cambridge.

Rinjard, P., Chef de Service au Laboratoire National de Recherches, Alfort (Seine), France.

(*g*) *Standardisation of Biological Products (Sera, Vaccine and Diagnostic Agents).*

Reporters :—

Eichhorn, Dr. A., Director, Veterinary Department, Lederle Antitoxin Laboratories, Pearl River, Rockland County, New York.

Mohler, Dr. J. R., Chief of Bureau of Animal Industry, U.S. Department of Agriculture, Washington, D.C.

Flueckiger, Dr. G., Adjoint technique de l'Office vétérinaire, Département fédéral de l'Economie publique, Berne.

Section II.—Veterinary Medicine, Surgery and Obstetrics.

(*a*) *The Use of Drugs in the Treatment of Diseases caused by Nematode and Trematode Worms.*

Reporters :—

Taylor, E. L., B.V.Sc., M.R.C.V.S., D.V.H., Veterinary

Laboratory, Ministry of Agriculture, Weybridge, England.
HALL, Dr. M. C., Bureau of Animal Industry, U.S. Department of Agriculture, Washington, D.C.
*VEGLIA, Dr. F., Research Officer, Faculty of Veterinary Science of the Transvaal, University College, Pretoria.

(*b*) *Milk Fever.*
Reporters :—
GREIG, Professor J. R., PH.D., M.R.C.V.S., Director, Animal Diseases Research Institute, Moredun, Edinburgh.
FISH, Dr. P. A., Dean, New York State Veterinary College at Cornell University, Ithaca, N.Y.

(*c*) *Bovine Sterility (Prophylaxis and Treatment).*
Reporters :—
FREI, Professor Dr. W., Veterinär-Pathologisches Institut der Universität, Zürich.
WESTER, Professor Dr. J., Rijksuniversiteit te Utrecht, Utrecht.
BENESCH, Professor Dr. FRANZ, Vorstand der Geburtshilflichen Klinik an der Tierärztlichen Hochschule, Wien.
*CONKLIN, Dr. R. L., Macdonald College, Ste. Anne de Bellevue, Quebec, Canada.

(*d*) *Acute Infectious Mastitis.*
Reporters :—
MINETT, F. C., D.SC., M.R.C.V.S., Director, Research Institute in Animal Pathology, Royal Veterinary College, London.
KLIMMER, Professor Dr. M., Direktor des Veterinär-Hygienischen Instituts der Universität Leipzig, Leipzig.
STECK, Professor Dr. W., Veterinär-Medizinische Fakultät der Universität Bern, Bern.

(*e*) *Diseases of the New-Born.*
Reporters :—
MIESSNER, Professor Dr., Direktor des Hygienischen Instituts der Tierärztlichen Hochschule, Hannover.
MAGNUSSON, H., Director of the Cattle Market and the Bacteriological Laboratory of the Malmöhus Provincial Agricultural Society, Malmö, Sweden.
VAN ES, Dr. L., Director of the Department of Animal Pathology and Hygiene, College of Agriculture, The University of Nebraska, Lincoln, Nebraska.

Section III.—Tropical Diseases.

(*a*) *Theileriases.*
Reporters :—
YAKIMOFF, Professor Dr. W. L., Veterinary Institute, Laboratory of Parasitology, Leningrad.
MEYER, Professor K. F., University of California, San Francisco.

(*b*) *Control of Trypanosomiases.*
Reporters :—
HORNBY, H. E., Veterinary Pathologist, Veterinary Laboratory, Mpwapwa, Tanganyika Territory, South Africa.
BUBBERMAN, Dr. C., Directeur van het Veeartsenijkundig Instituut, Buitenzorg, Java.

(*c*) *Rinderpest (Prophylaxis).*
Reporters :—
KEARNEY, Professor W., M.R.C.V.S., Veterinary College of Ireland, Dublin.
CURASSON, M. G., Inspecteur-Général des Services Vétérinaires des Colonies, Bamako (Soudan Français).

Section IV.—Poultry Diseases.

(*a*) *Fowlpox and Coryza.*
Reporters :—
DOYLE, T. M., F.R.C.V.S., D.V.S.M., Research Officer, Veterinary Laboratory, Ministry of Agriculture, Weybridge, England.
BLIECK, Professor Dr. L. DE, Directeur van het Instituut voor Parasitaire en Infectieziekten der Rijks-Universiteit te Utrecht, Utrecht.
BEACH, J. R., University of California, College of Agriculture, Division of Veterinary Science, Berkeley.

(*b*) *Fowl Typhoid and Bacillary White Diarrhœa.*
Reporters :—
RICE, JOHN P., B.SC., M.R.C.V.S., Head of Division, Ministry of Agriculture, Belfast.
PANISSET, Professor L., Ecole Nationale Vétérinaire d'Alfort, Alfort (Seine), France.
MANNINGER, Professor Dr. R., Kgl. Ung. Tierärztliche Hochschule, Budapest.
BEAUDETTE, F. R. Poultry Pathologist, State of New Jersey Agricultural Experiment Station, New Brunswick, N.J.

(*c*) *Fowl Plague (Vaccination).*
Reporters :—
TRUCHE, Dr. V. C., Chef de Laboratoire à l'Institut Pasteur, Paris.
FARID BEY, A., Director, Veterinary Service, Ministry of Agriculture, Cairo.

(*d*) *Treatment of Parasitic Diseases.*
Reporters :—
BAUDET, Dr. E. A. R. F., Parasitaloog aan het Instituut voor Parasitaire en Infectieziekten der Rijks-Universiteit, Utrecht.
LAHAYE, Dr. J., agrégé à l'Ecole de Médecine Vétérinaire de l'Etat, Cureghem-lez-Bruxelles.

Section V.—Zootechny and Dietetics.

(*a*) *Genetics (Principles of Breeding).*
Reporters :—
PIROCCHI, Professor Dr. ANTOINE, Directeur de la Station expérimentale de Zootechnie, Milan.
KELLER, Professor Dr. KARL, Vorstand der Lehrkanzlei für Tierzucht und Geburtshilfe der Tierärztlichen Hochschule, Wien.

(*b*) *Deficiency Diseases.*
Reporters :—
STANG, Professor Dr., Tierärztliche Hochschule, Berlin.
MAREK, Professor Dr. J., and
WELLMANN, Professor Dr. O., Kgl. Ung. Tierärztliche Hochschule, Budapest.

(*c*) *Scientific Feeding of Animals.*
Reporters :—
DECHAMBRE, Professor, Ecole Nationale Vétérinaire d'Alfort, Alfort (Seine), France.
HART, Dr. G. H., Professor in Veterinary Science, University of California, Branch of the College of Agriculture, Davis.

* Has not yet accepted.

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PLACE OF MEETING, ETC.

The Congress will meet at the
Central Hall, Tothill Street, Westminster, S.W.1,
from Monday, August 4th, to Saturday, August 9th, 1930.

On Sunday, August 3rd, a **Reception** will be held in the evening.

The **Opening Meeting** of the Congress will take place at 11 a.m. on Monday, August 4th, when it is hoped that the Minister of Agriculture and Fisheries will attend to declare the Congress open. At this meeting short speeches will be made by Delegates of Dominions and Foreign Countries.

A detailed time-table showing the times at which the General and Sectional Meetings of the Congress are to be held will be published in the **Official Programme** which will be sent to members in good time before the Congress.

SOCIAL FUNCTIONS.

In addition to the Congress Meetings there will be arranged a series of social functions in the evenings which will probably include—

A Conversazione, at the Natural History Museum, South Kensington, London, S.W.7.

A Congress Banquet for members and their guests.

An Official Banquet given by the British Government and limited to accedited official delegates, including those from Dominions, Colonies, and Foreign Countries.

A Reception by the **Lord Mayor of London** at the Guildhall.

Admission to all the above functions will be free to members, except the Congress Banquet, for which a charge will be made, of which particulars will be announced later.

Special Social Meetings, visits to places of interest in and around London, etc., during the Congress week, will be arranged for ladies accompanying members.

It is hoped to arrange for a special Committee of British veterinary students to organise the entertainment of student members of the Congress. Particulars of any special provision which it is found possible to make for welcoming veterinary students from abroad will be announced as soon as possible.

A number of special tickets of admission to the **Zoological Gardens,** Regent's Park, London, N.W.1, will be available for distribution free to members from overseas.

Special Excursions to places of interest in the British Isles will be arranged for the week following the Congress, *i.e.*, from August 11th to 16th, 1930.

Sale of Poisons.

Report of Departmental Committee.

The report is issued of the Departmental Committee which was appointed in July, 1926, to consider and report whether any modifications are necessary or desirable in the Poisons and Pharmacy Acts (Stationery Office, Cmd. 3512, price 1s. net). The following is a summary, reproduced from *The Times*, of their main recommendations :—

That a new Pharmacy and Poisons Act be passed into law.

That the profession of pharmacy and the control of poisons, respectively, be kept distinct and dealt with in separate parts of the Act.

That the Privy Council continue to be the Central Authority for pharmacy, and be given power to nominate three additional members of the Council of the Pharmaceutical Society of Great Britain, who shall hold office for such time as the Privy Council may determine.

That every person registered as a pharmaceutical chemist or chemist and druggist become a member of the Society by virtue of being so registered; and that election of members, on their application, from among persons so registered shall cease; that any person ceasing to be registered shall cease to be a member.

That a " Statutory Committee " be appointed with power to remove from the register the name of any person who has been convicted of an offence against the Pharmacy Acts or of any criminal offence, or who has been guilty of any conduct which, in the opinion of the Statutory Committee, renders him unfit to be on the register; and with power to restore to the register any name or entry erased therefrom. Right of appeal to the High Court (in Scotland, the Court of Session) is recognised.

That it shall be unlawful for any person, unless he is a registered pharmacist, to use any title or description reasonably calculated to suggest that he or anyone employed in his business possesses any qualification with respect to the selling, dispensing, or compounding of drugs or poisons other than the qualifications which he in fact possesses; or to use the title of " chemist " in the retail sale of goods.

That it be the duty of the Society to enforce the provisions of the new Pharmacy and Poisons Act, and to appoint inspectors, who shall be pharmacists and shall possess powers to make their inspection effective, subject to the approval of the Privy Council.

That, as from the appointed day, the Arsenic Act, 1851, and the provisions of the Pharmacy and Poisons and Pharmacy Acts relating to the sale, supply, and distribution of poisons, shall cease to have effect, and in lieu thereof the provisions of the new Pharmacy and Poisons Act shall have effect.

That the Central Authority for poisons be the Home Secretary, assisted by an Advisory Committee, to be called the " Poisons Board," whose functions shall be to prepare and submit a " Poisons List " to the Secretary of State; to consider or recommend any amendment or variation of the " Poisons List "; and to assist the Secretary of State in making rules with respect to the sale, wholesale or retail, or the supply of poisons and various other matters relating to poisons.

That the " Poisons List " be divided into two parts: Part I to include poisons which may not be sold retail except by " authorised sellers of poisons "; Part II to include poisons which may be sold retail only by authorised sellers.

That, wherever possible, generalisation be avoided in the " Poisons List," and the poisons therein individually and specifically defined.

That power be given to prohibit by rule the sale by retail of such of these poisons as may be specified except on the prescription of a registered medical practitioner, dentist, or veterinary surgeon; and that power be given to provide by rule for prescribing the form and regulating the use of prescriptions.

That the use by any person of any title or description reasonably calculated to suggest that he is entitled to sell any poison other than one in Part II of the " Poisons List " should be punishable, on summary conviction, by a fine not exceeding £5; and that, if any person so registered be convicted before any Court of an offence against the Pharmacy Acts or any criminal offence, rendering him, in the opinion of the Court, unfit to have his name on the list, he may, as part of his sentence, have his name removed from the list and be disqualified for any specified period for having his name on any such list.

Mr. F. W. Gamble, a member of the Committee, signs a minority report, and Mr. A. E. Young signs the majority report while making certain reservations.

Notes and News.

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events.

March 24th.—Meeting of the Editorial Committee, N.V.M.A., at 10 Gray's Inn Square, W.C.1.

March 27th.—Annual Meeting of the Western Counties Division, N.V.M.A., at Exeter.

March 27th.—Annual Meeting of the Southern Counties Division, N.V.M.A., at Winchester.

March 31st.—N.V.M.A. Committee Meetings at No. 2 Verulam Buildings, Gray's Inn, W.C.1:—Appointments, 2 p.m.; Veterinary Officers and Public Health, 3.30 p.m.

April 1st.—N.V.M.A. Committee Meetings at 10 Red Lion Square, W.C.1:—Mining Sub-Committee, 10 a.m.; Parliamentary, 11 a.m.; Organising, 11.30 a.m.; Quarterly Meeting of Council, N.V.M.A., at 10 Red Lion Square, W.C.1, 3 p.m.

April 1st.—Annual fees due to R.C.V.S.; Quarterly meetings of Committees, R.C.V.S.

April 2nd.—Registration and other Committees, R.C.V.S.

April 3rd.—Examination, Registration, and Parliamentary Committees, R.C.V.S.
April 4th.—Library and Finance Committees, R.C.V.S.; Quarterly Meeting of Council, R.C.V.S.
April 10th.—Meeting of the Central Division, N.V.M.A., at The Royal Veterinary College, Camden Town.
June 5th.—R.C.V.S. Annual General Meeting, Dublin.
June 13th.—D.V.S.M. Written Examinations.
June 16th.—D.V.S.M. Oral Examination commences.
July 2nd.—R.C.V.S. Quarterly Meetings.
July 3rd.—R.C.V.S. Quarterly Meetings.
July 4th.—R.C.V.S. Quarterly Meetings.
July 7th.—R.C.V.S. Membership Examination commences.

AUGUST 3rd to 9th.—11th INTERNATIONAL VETERINARY CONGRESS, CENTRAL HALL, WESTMINSTER.

Personal

Grave Illness of Professor Wooldridge.

Our readers will learn with the greatest concern that Professor G. H. Wooldridge, F.R.C.V.S., M.R.I.A., Professor of Medicine and Clinical Parasitology at the Royal Veterinary College, London, is lying very seriously ill, septic pneumonia having developed following upon the contraction of a severe chill early last week. All will feel the deepest sympathy for Professor and Mrs. Wooldridge and will desire to share in our expression of earnest hope that he may soon be restored to health and strength.

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MR. J. H. CARTER, F.R.C.V.S., F.R.S.E.,

The sympathies of everyone will also go out to Mr. and Mrs. J. H. Carter, of Henley-on-Thames. For the past three weeks Mr. Carter has been lying dangerously ill, and his condition continues to give rise to much anxiety.

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Appointments.

Mr. John M'Arthur, who qualified M.R.C.V.S. at Glasgow Veterinary College in July, 1928, has been appointed assistant veterinary officer in Northern Rhodesia at a commencing salary of £600.

Mr. Donald Menzies, who qualified M.R.C.V.S. at Glasgow Veterinary College in July, 1929, and who was subsequently awarded a Veterinary Research Scholarship by the Department of Agriculture, has now been appointed veterinary adviser to the University of Bristol.

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North of England Division President.—Councillor J. H. Taylor, F.R.C.V.S., who has been elected President of the North of England Veterinary Medical Association, has had 35 years' association with Darlington, and was recently elected a member of the Town Council. During the War he held the rank of Major, and was D.A.D.V.S. to the 4th Division in France. He was awarded the Military Cross. Mr. Taylor, who has now retired from active participation in the veterinary profession, still retains a keen interest in the administrative work. He is not a stranger to the position of chairman, as 30 years ago he acted as President of the South Durham and North Yorkshire Veterinary Medical Association, now amalgamated with the North of England Division.

R.C.V.S. Obituary.

DAY, EDMUND, O.B.E., Maj. late A.V.D., 63 Hamilton Road, Reading, Berks., Graduated Edinburgh January 15th, 1879. Died February 28th, 1930, age 73 years.

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The late Mr. T. RUNCIMAN.

In reference to the death of Mr. Runciman, announced in our last issue, the *Cambridge Daily News* says:—

"Much regret will be felt by the death of Mr. Thomas Runciman, the well-known veterinary surgeon, of Station Road, Ely, which occurred at his residence on Sunday, in his 86th year.

"The late Mr. Runciman was a native of Haddington, Scotland, being the son of the late Mr. and Mrs. James Runciman. The deceased gentleman enjoyed a great measure of public respect and esteem, and previous to his coming to Ely forty years ago as a veterinary surgeon, had held practices in various parts of Scotland and England. He had just celebrated his diamond jubilee in his profession, having been a qualified veterinary surgeon for 60 years.

"Mr. Runciman was a member of the Royal College of Veterinary Surgeons, qualifying in 1870, and he also held the diploma of the Highland and Agricultural Society. Throughout his long career he was a regular attendant at all the big shire horse shows, and in the local foal shows was looked upon as a man possessing the finest knowledge of veterinary work. For many years he had been the valued inspector to the Isle of Ely County Council and the Ely Urban District Council. In other circles, he was a member of the Manchester Unity of Oddfellows and a member of the Ely Lodge of St. Audrey's Freemasons, and in 1911 held the office of Worshipful Master.

"Mr. Runciman, whilst he enjoyed health and strength, was an active man and a familiar figure in town and county. About two years ago he underwent a very serious operation, and made a satisfactory recovery, but since then he has not been able to enter into his profession as he had previously done, and the business had been carried on by one of his sons, Mr. William Runciman, M.R.C.V.S., who will continue to do so.

"Five sons and two daughters survive to mourn their loss. Four sons follow him in the veterinary profession."

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At Alton, Hants, on March 15th, 1930, EMILY WALKER, aged 76 years, beloved wife of J. Walker, M.R.C.V.S., and mother of G. S. Walker, M.R.C.V.S., and Lt.-Col. W. H. Walker, R.A.V.C.

Regimental Alliance.

The King has approved of the Royal Canadian Army Veterinary Corps, Permanent Active Militia of Canada, and the Canadian Army Veterinary Corps, Non-Permanent Active Militia of Canada, being allied to the Royal Army Veterinary Corps.

Distemper Immunity.—Mr. Henry Gray writes:—"In my contribution to the discussion on Major Dalling's paper, paragraph 4, col. 2, p. 230 of the *Record* of March 15th, should read:—"The traditional knowledge of dog owners and veterinary practitioners was that a mild, moderate or severe attack of that complex known to them as "distemper" gave, in 95 per cent. of cases that absolutely recovered, immunity to the end of their lives without their being subject during the interval to the simplex, analytical or laboratory forms of distemper, as alleged now to follow vaccination."

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Miss Winifred Spooner.—The intimation in the daily Press of March 10th that Miss Winifred Spooner has been awarded the Women's Trophy of the International League of Aviators and thus "has been acclaimed world champion woman aviator," is of particular interest to members of the profession.

Miss Winifred Spooner is the granddaughter of the late Professor Charles Spooner, who was a well-known veterinary surgeon, and President of the Royal College of Veterinary Surgeons for the year 1858-59.